THE NEW ENGLAND FARMER

DEVOTED TO AGRICULTURE, HORTICULTURE, AND KINDRED ARTS.

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WORK IN JULY.

The poetry of earth is never dead;
When all the birds are faint with the hot sun,
And hide in cooling trees, a voice will run
From hedge to hedge about the new-mown mead;
That is the grasshopper's.
—*Keats.*

SECURING the hay-crop is the prime work of the month of JULY, in New England. It is generally considered the most valuable crop of the Northern and Middle States, and farmers usually get as much other work as possible out of the way, so as to give it all the attention which its importance demands.

In noticing the duties which are peculiar to the months as they pass along, we do not care to engage in any discussion as to the best modes of preparing soils or securing crops, and we, therefore, only suggest here what we have urged at some length in other columns, that the farmer give especial thought, this season, as to the time and manner of securing his hay. That he will make some experiments in cutting early and curing as much as possible in the cock. When he has done this his observation must be extended to feeding it out, and observe whether the stock eat the hay with greater relish than they do late cut grass, and whether it makes more milk or flesh, other things being equal.

The idea of cutting grass two or three weeks earlier than the old practice has been, will be a new and startling one to many, and if it is a good idea it ought to be confirmed by the experience of thousands of our farmers. We hope the readers of these columns will give the matter especial attention and report to us by the score the conclusions at which they may arrive.

Devoted to the hay harvest as the month of July mainly is, there will be other *unfinished* labors calling for attention, that cannot be neglected without loss.

If haying is commenced earlier, it will necessarily find the *hoeing* in an unfinished condition. This must receive attention, or the great labor required in seeding would return but a poor reward. The process of hoeing is a process, indirectly, of manuring, and ought in all cases to be done faithfully and in suitable time. If the surface soil becomes dry and hard, like the skin of a "hide-bound" ox, the plants standing in it will grow slowly, if at all, and would probably be in a condition similar to that of such an animal at the ingathering of the crops. Instead of profit there would be loss, and it would be better, therefore, that the crop had not been put into the ground at all.

If the duties, then, of hoeing and haying come at the same time, the farmer must act in the exercise of a wise judgment. In such a case no rule could be absolutely applied. The

circumstances would vary on every farm. Sometimes by adding new force for a day or two, or pressing on with the usual force for two or three days, the hoeing may be brought up, so that the crops may then be attended to as their condition requires. The farmer will remember, in the case of hoeing, that a year's seeding will make many years of weeding, and this fact must be taken into consideration, as well as that of loss of crop.

CULTURE OF ROOTS.—We still advocate the culture of roots for winter food for stock. We have recently seen two herds of cows, which are fed much alike, with the exception that in one herd each cow has had a peck of mangold wurzels daily since the first of March, and the cows of the other herd had none. Those having the roots have continued in yielding large messes of milk now, at the end of nine months, while the others have fallen off to one-half that amount.

We cannot judge of the value of roots for stock by the mere amount of nutritive matter which they are found to contain by an analysis. They have a value entirely beyond that. It is probable that men, or the bovine race, would live for a long time on boiled potatoes, and yet by the analysis, the potato has only *seventeen* parts of nutritive matter, and eighty-three parts of water!

The use of roots for stock undoubtedly has a decided influence in the stomach upon other articles of food, and conduces to the most perfect digestion and assimilation.

There is no food in which cattle delight so much, and on which they thrive so well, as short, sweet, succulent grass. This is as full of juices as a nut is of meat. We cannot have this the year through, but are obliged to feed them upon long grass, in a dry form, and too often upon that which had exhausted its juices before it was cut. This is their principal food, week after week, and month after month, in this climate, during a considerable portion of the year. Can there be a doubt, then, that fresh, juicy roots are not only grateful to the beasts, but that they are actually very important in point of health, thrift and profit? We do not believe that there can be a reasonable doubt about it.

With the tools at hand to aid in their culture, and the enlightened modes of doing so, which have been introduced, we have no doubt but that they can *profitably* be raised by most farmers.

It is not too late to put in any crop of the turnip family in the early part of JULY, and we hope these suggestions will induce many to try the experiment.

For the New England Farmer.

THE GARDEN IN JULY.

During the month of July, when haying and harvesting seem to demand the entire energies of the farmer and his help, it will require no little appreciation of the value and usefulness of a good garden to induce him to pay any attention to it; and, consequently, there is danger of its being neglected. July, in our New England climate, is a growing month for vegetation, and especially for weeds. They *grow*, if nothing else does; and every day that they are suffered to occupy the soil, the more difficult it is to exterminate them, and the more they steal from desirable crops. It is better to employ an extra hand than to leave the garden and its productions, on which we have expended two or three months' labor, to neglect and loss.

If the garden has been well cared for up to the present time, a few moments in the early morning or at the close of the day will be sufficient to keep the weeds down and the plants vigorous. Most plants are better for having the soil stirred around them while the dew is on, provided care is used in not getting dirt on the foliage. The morning is also the most favorable time to destroy many kinds of insects and worms. As our mowing is now done by the machine, there is not that need of commencing so early in the morning that there was when only the hand scythe was used. Besides, grass cut after the dew is off will cure quicker, and be ready sooner for the barn, than that cut wet with dew. Encourage the boys to work in the garden,—encourage them to cultivate a taste for gardening and rural pursuits, by giving them a portion of the garden for their own use, or a portion of the products of the garden, provided they tend it well, and pay them a fair market price for all they raise, and not, as is sometimes done, offset it against some former favor, or forget to *pay* them at all.

ASPARAGUS.—The season for cutting is now over, and the bed, very likely, is covered with grass and weeds. A little time now devoted to clearing it and applying a dressing of some suitable fertilizer, and working it in lightly and carefully will be richly repaid next spring in increased productiveness and freedom from weeds.

BEANS.—The first crop of Dwarfs will now be in their prime, and the succession coming forward, more may be planted, if desirable, for late fall use and for canning. See to and train the running sorts to the poles.

Hoe and keep them well cultivated, when not wet.

Beets.—Keep them well hoed and thin out to six or eight inches apart. As the early crop comes into use, save at least one of the best and earliest to grow, and retain it for growing seed from next year. If the prospective winter crop seems short, "Early Blood Turnip" may yet be planted with a certainty of a fair crop, if sown in rich, warm soil and *well* tended.

Celery. — Plant out in well prepared trenches, shading if the weather is hot. Give abundant watering, if the weather is any ways dry, and the soil well drained. Keep clean of weeds and cultivate *well*.

Cucumbers may yet be planted for pickles, on well prepared, warm, quick soil. Hoe those already up, and protect them from the "striped bug" and other enemies.

Manure.—Throw all weeds, potato tops, turf sods, and anything capable of decomposing into plant food, into the compost heap, and pour over it the house slops, soap suds, &c.

Melons.—Destroy the bugs and thin to three plants to a hill. Keep them clean of weeds, by hoeing and pulling the weeds by hand.

Potatoes.—It is better not to hoe them much after blossoming, but to keep them clean of weeds by pulling and cutting them. Make the hills large enough and high enough to cover all the growing tubers, or they will be greened and injured for eating. Early planted should furnish us good boiling sized tubers during the month. Select for digging, hills having the fewest, largest and most mature tops, as they will be likely to contain the most mature potatoes.

Tomatoes.—After blossoming and setting fruit, pinch off the ends of such shoots as contain the fruit, and train the vines to trellises, or lay brush to keep them up from the ground Early ones will begin to ripen during the month.

Turnips.—The Ruta Baga and Sweet Russia should be sown early in the month; Yellow Aberdeen about the middle of the month; the other soft English turnips from the 25th to the last of the month, or, in good soil and favorable locations, as late as the 10th of August will answer some seasons.

W. H. White.

South Windsor, Conn., 1869.

For the New England Farmer.

BIRDS ON FARMS AND ORCHARDS.

I was about to reply to some remarks on this subject in the Farmer of May 22, when I fell upon the enclosed, which is to the point, and I would ask you to publish it in the Farmer.

Birds on Farms and Orchards.

An extensive experiment has been made on the Continent, the result of which has been the opinion that farmers do wrong in destroying crows, jays, &c., and the small birds on their farms, especially where there are orchards. That birds occasionally do mischief amongt ripe grain, there can be no doubt; but the harm they do in autumn, is amply compensated by the good they do in spring, by the havoc they make amongst the insect tribes. The quantity of grubs and bugs destroyed by crows, and of caterpillars and their grubs by various small birds, must be annually immense. Other tribes of birds which feed on the wing, destroy millions of winged insects, which would otherwise infest the air and become insupportably troublesome; even those usually supposed to be mischievous in gardens, have actually been proved to be innocent, for on examination they have been found to destroy those buds only, which contained some destructive insect. On some very large farms, the proprietors determined a few years ago, to offer a reward for the heads of crows, but the issue proved destructive to their farms, for nearly the whole of their crops failed for three succeeding years, and they have since found it necessary to import birds to restock their farms! And of late years, the extensive destruction of the foliage and young fruit trees in orchards, by a species of caterpillar, has excited the attention of the naturalist; and it has been found to have arisen from the habit of destroying those small birds about orchards, which, if they had been left unmolested, would have destroyed or kept down these destructive insects.

Every crow requires at least one pound of food a week, and nine-tenths of their food consists of worms, grubs and insects; one hundred crows then, in one season, destroy 4780 pounds of worms, grubs, insects and larvæ. From this one fact, some slight idea may be formed of the usefulness of this much persecuted bird, the farmer's best friend; but a thousand more well-attested facts might be stated to show the value of birds to the farmer, if more were needed. Let then, every farmer, and every one who is interested in the labor of the farmer—and who is not? do what he can to protect them, and the face of the country will no longer present the appearance of a scorched and blasted wilderness, but will preserve its beauty to the eye, and the trees will produce their fruit in season.

Early the other morning a pair of the Baltimore Oriole (Gold Robins,) attacked a nest of young caterpillars on an apple tree near the window where I am writing. No gourmand was ever more zealous over a broiled Ortolan or an edible Birdsnest, than this pair was in breakfasting on the young caterpillars. But one nest was not sufficient. After utterly demolishing the first, they visited another, and were still breakfasting when I left to get mine. Kill the birds! When you do it you empty your purse! Let 'Em Alone.

Essex County, Mass., 1869

Remarks.—Our own opinion, which has been often expressed in these columns, is that crows are of more benefit than injury in the world. Still the question of the balance of the good and evil which they and other birds effect on the farm is not one to be settled by an editorial *ipse dixit*. Others may differ from us, and possibly we may see cause to change our opinion. In the last number of

the *Boston Journal of Chemistry*, Dr Nichols says some hard things against the birds. Last year they took all his cherries, many of his strawberries, and all of his Delaware grapes, and his neighbors were subject to similar losses. He says "birds were never so plenty in New England as during the past five years, and the ravages of insects and worms never were more disastrous than during that period," and he thinks the time has come when the birds must be thinned out, in order to save our valuable fruits.

On the other hand, Mr. S. D. Greenleaf of Starks, Me., writes to the *Maine Farmer* that he thinks farmers are doing themselves an injury by declaring war against the crows. The only damage they have ever done to his crops is in pulling up some of his corn, for which he finds the following remedy cheap and sure. He says:—

I sow evenly over the ground about three quarts of shelled corn to the acre; upon that and what insects the crows devour while travelling over the ground, they subsist, without disturbing the young corn. I take a walk every few days over the fields, to see if the corn I sowed is all gone; if so, I scatter more, as in the first instance, and pursue that course until the young corn is so large that they will not meddle with it. I find this method to be cheaper than it was to use twine or images, which with me were never a sure remedy.

CARE OF MILK VESSELS.

In an article in the *Ohio Farmer*, written by a cheese factory man, we find the following suggestions on washing cans, which are equally applicable to pans and other dishes in which milk is kept:—

When a can is to be washed, do not put hot water in it at first, but put in water not above milk warm which will readily dissolve the milk if any is dried on to the tin, and it works off very easily; while if hot water is applied at first, it has a tendency to cook the milk on the tin, in which condition water will not very readily dissolve it, but warm milk will. It is therefore very important to give strict heed to this matter, and see that the milk is thoroughly removed by washing before any boiling hot water is applied. Care must be taken to remove every vestige of the milk about the seams of the cans and covers, as here is where the trouble always begins. My attention is always directed to the seams first, if I suspect a can is not properly cleansed, especially the seams in the cover. The little tube in the center of the cover, is also a place to be especially looked after in cleaning the can.

Very many people who consider themselves, and are considered by others patterns of neatness, fail to keep their milk cans perfectly cleansed; many times no doubt through ignorance of how to do it, and many times from a lack of appreciation of the extreme *neatness* of that scrupulous care necessary to keep everything used about milk *immaculately* clean.

TO KEEP FOWLS HEALTHY.

The way I keep my fowls in health, I clean out the house once a week; put wood ashes under the roosts; have iron basins for them to drink from; whitewash inside of hen house with *hot* lime; put a little kerosene oil on the roosts once a month. The main food is oats, and cake of scraps to pick on. I never feed but once a day—at noon, or when I shut them up at four or five P. M. When they run out, then give them all they will eat. In my experience, there is no way to get diseased fowls easier than to keep them stuffed; it makes them lazy, and they won't work as much as they ought to, to keep in a healthy condition.

I never had any gapes in chickens. When any fowl begins to droop, I give three large pills of common hard, yellow soap; 'tis the best thing to cleanse a fowl I know of. I follow it for three days, give them nothing to eat and plenty of pure water to drink. In desperate cases, give a half teaspoonful of tincture of lobelia. It will seldom, if ever, fail of curing. It is a very cleansing and powerful medicine for fowls.—*H. C. Wheeler, Foxboro, Mass., in Rural New Yorker.*

PREMIUM FOR CORN.—John D. Lyman, Farmington, N. H., offers the following premiums on corn grown in that State the present year. For the best 100 ears of eight-rowed corn, $35; for the second best 100 ears of eight-rowed corn, $15; for the best 100 ears of more than eight-rowed corn, $35; for the second best 100 ears of more than eight-rowed corn, $15. The corn must be well traced, and so secured by cords as not to break, and to be forwarded free of expense, so as to reach the subscriber at Smyth's Hall, in Manchester, by noon of the last Tuesday of December next, at which time and place the premiums will be awarded. Size, beauty and quality, both of ears and grains, are among the things to be considered in awarding the premiums. Each 100 ears must be grown upon one farm, and none of it selected from plots of less than one acre. The four premium traces are to belong to subscriber, and all others to their owners. Method of cultivation to be furnished in writing.

PISCATAQUA, N. H., AGRICULTURAL SOCIETY.—The following officers were recently elected:—James H. Butler, President; C. H. Hayes, Secretary; F. W. Miller, C. B. Mason, Benning Morrill, Trustees.

HAY CROP IN NEW ENGLAND.

VERY near at hand is the season when the farmer must attend to the securing of this important crop. The questions as to *when* this shall be done—that is, at what particular period in the growth of the grass, —and in *what manner* shall it be done, if properly decided and practiced upon, will greatly enhance the value of the crop beyond what it would be if the grass is cut and cured under some of the modes too often practiced.

The amount of hay made in New England this summer will probably amount to *five millions of tons*, and its cash value will undoubtedly be something more than *fifty millions of dollars*.

This value may be very essentially decreased by the methods adopted in cutting and curing the grass. The almost universal practice for many years past has been to cut the grass early in the morning, before the dew was off —if cut with a hand scythe—and sometimes it is cut in that condition with the mowing machine. The grass was then spread, turned at noon, exposed to the sun all day, and just at night put into cocks. In many casss the grass was not put into cocks, but merely thrown into windrows.

On the morning of the second day, as soon as the dew was off, the hay was spread out again, turned once or twice during the day, and at about three or four o'clock in the afternoon. it was taken in. In some cases the hay was cocked a second time, and again opened and had a *third* days' sunning!

The inquiries of every farmer ought to be—What effect has this process upon the grass? Is my labor upon it, merely to dry it so that it can be preserved for winter use, or is there some other object to be gained at the same time?

We have often given our own opinions on this matter, and have stated that they were founded, not upon mere "hearsay," but upon reading, observation and a careful experience in cutting and curing the grass, and in feeding it to domestic stock.

Let us see now what *others* say about it. A writer in an old number of the *Ohio Farmer* gives the following excellent advice on the

Philosophy of Curing Hay.

"Don't dry your hay too much. Hay may be dried till it is as worthless as straw. As a good coffee-maker would say, 'Don't burn your coffee, but brown it;' so we say, don't dry your hay, but cure it. Our good old mothers, who relied upon herb tea instead of 'potecary medicine,' gathered their herbs while in blossom and cured them in the shade. This is the philosophy of making good hay. Cut in the blossom, and cure in the shade. The sugar of the plant when it is in bloom is in the stalk, ready to form the seeds. If the plant is cut ealier, the sugar is not there; if later, the sugar has become converted to woody matter.

Hay should be well wilted in the sun, but cured in the cock. Better to be a little too green than too dry. If, on putting it into the barn, there is danger of 'heating in the mow,' put on some salt. Cattle will like it none the less.

Heat, light, and dry winds, will soon take the starch and sugar, which constitute the goodness of hay, out of it; and the addition of showers render it almost worthless. Grass cured with the least exposure to the drying winds and searching sunshine, is more nutritious than if longer exposed, however good the weather may be. If over cured, it contains more woody fibre and less nutritive matter.

The true art of hay-making, then, consists in cutting the grass when the sugar and starch are most fully developed, and before they are converted into seed and woody fibre; and curing it to the point when it will answer to put into the barn without heating, and no more."

A writer in the *Maine Farmer*, says "hay should always be cut with all its juices intact and before its seed is ripe. To do this effectually, sweating in cock is better than too much exposure to the hot sun; and if the weather is showery, cloth caps for the cocks will sometimes pay for themselves the first season, in the quality of the hay alone."

The above statements are true in every particular. They have been verified in numerous instances. Fifteen years ago, we purchased fifty caps at a cost of forty cents each. They protected a crop of grain the first year, during a seven days' storm, and fully saved their cost in that single instance.

The following is from the *Valley Farmer*, good authority:—

"The whole science of hay-making consists in three things: First, cut the grass when in blossom; second, dry it not much; third, let it go through a sweating process before it goes into the barn. On these three things depend the quality of hay. Hay should be grass preserved. The nearer to the fresh, tender, succulent grass you get it, the better. Could we have grass growing in winter, how much better than hay. Well, hay is an attempt to do this as near as we can. We dry apples and berries so that we may have them in winter. . . . But we can't have them absolutely fresh, so with grass; we preserve it, and hay is the result. . . . Grass, when in blossom, has its full growth, excepting the seed. It is yet tender in a measure, and it has one advantage which no other stage of the grass possesses—it develops its sugar then. Especially is this the case with clover, whose head, when in blossom, is a globe of sweetness. . . .

The best farmers have decided that the blossoming time is the best time to cut the grasses, especially the clover. When grass is ripe, what is it good for? Certainly not for pasture; and will it be better when it is still farther dried and made hard?"

The object should be to save the grass as nearly as possible in this condition. Expose it to the sun and air until it is thoroughly wilted. By that time most of the moisture, which is mere water, has escaped, and the juices, holding in solution the nutritive properties, are retained, and in themselves not spoiling, but keeping the hay soft and pliant. Continued heat will evaporate these, and rains and dews will soon remove them and leave a dry, almost worthless stalk. The sun is injurious. It bleaches and evaporates too strongly. The best way is to cure in the shade as much as possible, and that is best done in the cock. Cured in this way, it is fragrant, nutritious, and the greenest of greens.

At a discussion at the New York State Fair in September, 1865, the general subject was, "Grass—Kinds, Quality, Proper time for Cutting, and best method of Curing for Hay." During this discussion, some of the best farmers in the country gave their opinions, and we believe they all agreed on these two points, viz: that early cut grass makes the best hay, and that it is better dried mainly in the shade. Among the speakers was Mr. J. STANTON GOULD, a skilful botanist and an eminently practical person, who said:—

"Prof. Way, a distinguished chemist, found that grass mowed just in the flower was the most nutritious. When grass is allowed to ripen its seed, the straw is converted into woody fibre, is indigestible, and its nutritious value very much lessened. Animals fed upon hay of grass cut in flower are more thrifty and hearty, and show a sleeker coat than when fed upon hay made from grass matured before being cut. When timothy is allowed to mature its seed, its stems are mere dry straw, the sugar and gum which they contained having turned into woody fibre. The seeds do not open in the animal, but are passed off. The best way to make hay is to cut grass when the dew is off, and allow it to wilt, which, in a hot sun, requires four hours; then, towards evening, rake and cock, and next day, if the weather is fine, open, dry, and haul into the barn."

Mr. VAN ALSTYNE said he cut 100 to 125 acres annually.

"I commence mowing in the morning, after the dew is off; start the rake after dinner, and get all in cock before 5 o'clock. Get it in the next day, if the weather is favorable. Ripe timothy is no better than barley straw. I make it a rule to cut my grass as early as possible, most of it the first week in July."

Col. BREWER said he had followed cutting grass green since 1822. Cut clover from the 18th to the 24th of June. Believes the sugar saved by cutting just in the blow is of more nutritive value than *four* times what it would be if left to mature the seed.

Mr. DEDERICK preferred to cut early, and if all the crop could not be cut at the right time, thinks it better to cut when a little too green than when too ripe. When grass is cut early "it is better for the fields."

Similar opinions were expressed by all who took part in the discussion, except by some who preferred riper hay for horses.

In curing hay, it is very important that it should not be wet by showers, nor exposed to dews, while in the process of curing. They dissolve and wash out the soluble constituents of the grass. The sugar and the soluble salts are removed in this way, and the hay is thus made to approximate to the insipid and innutritious condition of woody fibre. It has been rendered less palatable and less digestible. Beasts will not, therefore, eat it with the same avidity as if it had been properly saved; and even if they did, it could not afford the same nourishment. A little care in this matter, during the hay harvest, will fill the barns with sweet and nutritious hay.

HOEING AND HAYING.

Conditions of soil and weather that are favorable to the growth of crops, are also favorable to the growth of weeds, and unless special and constant pains are taken to eradicate the weeds, they will overtop and choke the crop. Such seems to be the order of Providence. The virtues and vices spring up and grow together, and unless special culture is directed to the suppression of the latter, the former will yield but little if any fruit.

As in moral so in physical culture, a large portion of the time and strength of the cultivator must be employed in removing that which would injure the growth of the valuable or ornamental products which he is striving to develop. The very culture which will give strength and vigor to the plant, will give vigor and strength to the weeds, if suffered to stand by its side.

In the early part of the season, while the plants are small, and before other work becomes urgent, we generally keep our grounds clean, and we seem to suppose that the weeds are effectually subdued. But as children,

however tenderly cared for in early life, if exposed to evil influences and evil examples, without restraint, will develop bad habits and dispositions, so without constant attention during that portion of the year in which the temperature and moisture cause the seeds to germinate, the weeds will grow.

Most farmers intend to get the hoeing done before commencing the haying. This was the rule among our fathers, who did not generally commence their haying as early as good farmers do now-a-days. When our hay consisted mostly of redtop and natural grasses, it might be allowed to stand longer without injury, than the clover and herdsgrass, on which we now so generally depend, and which experience teaches us must be cut while it retains as much as possible the property of grass. This renders it necessary to begin haying some ten to fourteen days earlier than formerly, and the cultivator and hoe cease to work among the corn and potatoes so much earlier.

If a portion of the farm is devoted to market gardening or early fruits, these must be attended to in their season or they will be lost. We know a man who had a field of early potatoes, which made a fine show in June, and promised a large crop, but the dry weather of the heated term choked the growth of the tubers, and at the same time ripened up his strawberries so rapidly that they required all the force he could raise. By the time the strawberries were picked the weeds fairly overtopped the potatoes, and now what should be done? If he undertook to "gather up the tares he would gather up the wheat with them." If he "let them both grow together till the harvest," he would have a small crop of potatoes and a large crop of weed seeds for next year. So he just put in the plough and turned under both weeds and potatoes, and sowed turnips. Perhaps it was rather an expensive green crop with which to enrich his soil; but almost anything is better than a crop of weeds.

During the latter part of July and August, the moist, sultry weather which we usually have, greatly favors the growth of weeds, and the corn and potatoes are then so large that we cannot work among them without injuring the plants. Our method of planting is predicated on the idea that the ground is free from weeds, and that the plants should be placed as near as they will grow without interfering with each other. But in rich land and in old land the weeds are sure to come in a moist season. Now would it not be better on such soil to plant the rows at least one foot wider apart than we usually do? This would enable us to work among them two weeks longer, and without injuring the plants; and should we not be less reluctant to give our fields the benefit of another cultivation than we now are? and should we not generally on rich, weedy land, get quite as much to the acre as we do now? With the improved machinery we now have, we may get our hay in half the time it formerly took us; and this, with commencing earlier, will give us opportunity to put in the plough and hoe again after haying, and leave our fields clean at harvest time. We must give up the old maxims and practice which have been handed down as an heir loom, and adapt our methods to the circumstances in which we live.

Those who cut their hay early last season, had as fine weather as they could desire, and observation will show that we generally have fine weather from about the twentieth of June to the middle of July,—the very time to cut our cultivated grasses. After that, the weather grows "catchy" and much hay is hurt in the making. Let us learn wisdom by experience, and adopt such methods and so plan our work that everything shall be done at the proper time and to the best advantage.

Bugs in Peas.—Dr. I. P. Trimble, of Newark, N. J., says this bug or weevil in the pea is well nigh universal, at least over wide sections of the country. In the northern part of New York and New England, he does not usually affect the peas so seriously. Hence seed peas ought to be raised north of Albany and Boston. A very small egg, that soon becomes a minute worm is laid on the back of the pea pod. The little animal eats his way into the middle of the pea, and slowly matures into the weevil that we find in these peas. When the pea is green, he is so small as to be below notice. But when the ripe pea is brought to market, the size of the worm, and afterwards of the bug, is such as to make most dried peas unfit for the table. Fowls prefer them, and they will generally do as well for seed as sound peas. They do not affect the earliest of our peas, nor the very late varieties; but the Marrowfats and English Mammoth are always infested with them. As nineteen-twentieths of our pea crop is eaten green, the difficulty is one of little practical importance.

CULTURE OF CARROTS FOR STOCK.

THERE is much difference of opinion with regard to the economy of raising carrots for feeding to our stock. The economy of the matter we think will depend upon two things: first, the kind of land used, and secondly, the kind and amount of manure employed and the manner of cultivation.

If the land is heavy and weeds allowed to grow and shed their seeds upon it, it will cost more to protect the young carrot plants from the weeds, so that they will have some chance of growing, than it would to cultivate the crop through the entire growing season, if the soil were free from weeds.

Again, if manure is used that contains a variety of the seeds of weeds, some starting early in the season and others at a later period, it will cost twice as much to cultivate the crop of carrots as it would upon a soil that is suitable, and by the use of manure that contains no seeds of weeds.

Two other things are then necessary in order to cultivate the carrot economically. First the use of land that is clean in itself, and then the application of some fertilizer that is free from all seeds which are not wanted.

The soil should be ploughed deep and made fine. The rows of plants placed twenty to twenty-four inches apart and the plants in the rows four to six inches apart.

It is the practice of many persons not to sow the carrot until about the first of June. The reason assigned is, that by waiting until the soil is thoroughly warmed, the weeds will start up in great numbers—if their seeds are in the soil—and by working the soil at that time they will be destroyed. Then put the carrot seed in and they will come quick and get out of the way of the later weeds which may appear. This plan does not usually operate well. It is better to sow carrots as early in May as the soil can he made suitably fine. If the first week in May, so much the better.

The rows should be perfectly straight, and the crop cultivated, mainly, by horse power. The thinning of the plants in the row may be done with a hoe of proper width, leaving only the standing bunches; if there are too many plants together they must be thinned by the fingers.

In selecting land for this crop, some persons select an old sward, manure it heavily on the surface and turn it over late in the fall; pulverize well in the spring, apply guano, superphosphate, or some fertilizer that has no seeds of weeds, and put in the crop early in May. If the sod so turned over is a thick one and well cracked into pieces in ploughing, this plan is the best that can be adopted.

About two pounds of seed are required for an acre. It is cheaper to sow liberally than to leave vacancies, or be perplexed in mixing in some other crop. There are excellent machines to sow with now, which do the work quickly and well.

Judging from actual experience in feeding carrots to stock, we are inclined to believe their value is generally underrated. The analysis of chemists, also, give them more value than is usually accorded to them. Einhoff, a German chemist, states that 200 lbs. of potatoes, 460 lbs. of beet root, 350 lbs. of ruta baga, and 266 lbs. of carrots, are each equal to 100 lbs of good hay. He says that carrots *have a highly beneficial effect upon milk*, and adds, "It has long been known in our country that carrots are eagerly eaten by horses, and are very wholesome for them; in consequence of which they have been adopted as a remedy for horses that are overheated. The English, and particularly the Suffolk cultivators were the first to show that horses may be kept in full vigor, although they are employed upon the most laborious occupation, upon seventy or eighty pounds of carrots per day, and *eight* pounds of hay.

It is sometimes said that the carrot cannot be a nutritious food because so large a proportion of it is water. The same may be said of the potato, although we presume a person might live well upon it for months together. It is not altogether what we call the nutritive properties of a plant that gives it all its value. When analyzed, the carrot gives but little more solid matter than any other root, eighty-five per cent. being water, but its influence in the stomach upon other articles of food is

most favorable, conducing to the most perfect digestion and assimilation. This result, long known to practical men, is explained by chemists as resulting from a substance called *pectine*, which operates to coagulate or gelatinate vegetable solutions, and thus favors digestion in all cattle. The juices of fruits contain a gelatinous substance termed pectine, which forms the basis of the various jellies. Horses are especially benefited by the use of carrots.

Mr. T. H. LEVERETT of Keene, N. H., in an article in the Report of the Agricultural Department for 1863, says:—"My experience in feeding carrots to cattle is, that when fed a peck each day they never eat any less hay for it; their appetites are sharper, more regular, and the cattle look and feel a great deal better; their hair is more glossy and sleek. My horses are doing better this winter, as I am feeding them with less grain than ever before, and give them a pint of meal morning and night with dry hay, half a peck of carrots at noon and a little hay."

NEW PUBLICATIONS.

THE HORSE IN THE STABLE AND THE FIELD: His Management in Health and Disease. By J. H. Walsh, F.R.C.S., ("Stonehenge;") author of "British Rural Sports," &c., &c. From the last London Edition. With Copious Notes and Additions, by Robert McClure, M. D., V. S.; author of "Diseases in the American Stable, Field and Farmyard," and an Essay on the American Trotting Horse, and Suggestions on the Breeding and Training of Trotters. By Elwood Harvey, M. D. Illustrated with over Eighty Engravings. Philadelphia: Porter & Coates; Boston: A. Williams & Co. 540 pages.

The climate, soil, vegetation and stock diseases of Great Britain are so different in many respects from those of the United States that English agricultural and veterinary books need careful revising to be safe guides for practice here, however popular they may be at home. Yet many of our American reprints of English works of this kind have been very inefficiently edited, often perhaps from motives of economy on the part of publishers. This volume, however, bears marks of careful revision. A history of the horse, and of different breeds, remarks upon his action, on the principles of breeding, stable management, anatomy, physiology, &c., occupy the first 300 pages, and some 150 pages are devoted to diseases and their treatment, with a chapter on shoeing. In a notice of this part of "Stonehenge" on the Horse, Dr. Paaren, veterinary editor of the *Prairie Farmer*, says "the treatment recommended by him is sound, scientific, and we believe successful, being written by a practical man, and not copied from other books." The essay on the American Trotting Horse contains information that will be interesting even to those who object to the "agricultural horse trot." A list of imported horses, is also given. The paper, print, cuts, index, &c., are workmanlike, and altogether we regard it as a most valuable work.

TRANSACTIONS of the Wisconsin State Agricultural Society with Reports of the State Horticultural Society, and condensed Reports on the International Exhibitions of 1862 and 1867. Vol. VII. 1861 to 1868. Prepared by J. W. Hoyt, Secretary.

This volume covers a period of eight years in the history of the Wisconsin State Agricultural Society, and serves to connect the six preceding volumes with those which are to follow. The Society held no exhibitions during the years 1861, 1862 and 1863. A list of premiums awarded at the several fairs of the other five years is given, with some of the addresses delivered on those occasions, but very little from the farmers themselves of Wisconsin. Of necessity this volume is devoted more largely to the dry facts of the history of the Society than is usual in an annual volume. Still we think the space devoted to the details of two European tours, and to the lengthy addresses of gentlemen from other States, might have been more appropriately occupied by the "transactions" of the members of the Agricultural Society of Wisconsin, both in their associate and individual capacities. We look to the reports of the different State Societies for information on the agriculture and condition of the people of those States, and not of Europe. The success of a Secretary or of a presiding officer of a farmers' association depends on his skill in drawing out the members, setting them to work, getting them to write or speak, and reporting their doings, rather than on their skill in talking and writing themselves. To this criticism, which we hope friend Hoyt will take in as kind a spirit as it is given, the reports of much older societies are as obnoxious as the one before us. Even the "Transactions" of the great agricultural society of the great State of New York have been interlarded with European essays. A local report or a local newspaper is valuable less for its size than for the amount of local intelligence it contains.

The report of the State Horticultural Society, which forms a part of this volume, is capital. It furnishes just that information which the horticulturist interested in Wisconsin desires in relation to the fruits adapted to its climate and soil, and the modes of cultivation most successful there.

—S. N. Watson gives the following, in the *Maine Farmer*, as his method of preventing smut in wheat: make a strong pickle of salt and water in a tub; put in half a bushel of wheat and stir smartly, when about all foul stuff will rise to the top. Skim this off, and place a basket over another tub, and dip out the wheat to drain. Then put into a box and turn in dry ashes; stir so that the ashes shall touch every kernel; then put in plaster to make it sufficiently dry to sow. The same pickle will do for the whole lot.

For the New England Farmer.

REPLY TO QUESTIONS ABOUT CRANBERRIES.

The communication on "The Cultivation of Cranberries," which was published under my name in the FARMER a few months since, has flooded me with letters of inquiry from nearly every section of the country. When I penned the article I was not aware that the circulation of the FARMER extended over so wide a field, nor did I suppose that the interest in the cultivation of cranberries was so deep and wide spread, as the large package of letters before me convinces me it is.

I have no doubt that some of these correspondents are disappointed in not receiving immediate answers to the numerous questions which they have asked; all of them, I presume, supposing theirs to be the only letter of inquiry sent to me, and that it would be no great task to answer it. Finding it would interrupt my private business too much to write answers to each letter, I laid them aside, thinking when they were all in I would answer them in one communication through the columns of the FARMER, but they still continue to come; in fact, there seems to be no end to them; for before those from new correspondents are all in, the men who wrote first are now sending their second letters, having good reason to suppose that their first did not reach me.

The season for transplanting being at hand, and believing that I have many more questions in the letters already received than I can answer in one communication, I improve a few moments to dispose of them. Nearly every correspondent describes to me a piece of land which he owns, and desires to know if I think it suitable for producing good crops of cranberries. In reply to this question I would say to correspondents of Minnesota, and other Western States, that I know practically nothing of your soil or climate, and I may say the same to the correspondent of North Carolina and those of other Southern States. To those of Maine, Vermont, New Hampshire, Connecticut, and of this State, it is useless for me to advise you what business it is best for you to engage in, without knowing anything of the circumstances which surround you.

I think, however, I may venture to advise you all, who have a piece of land such as I described in my former communication, to try a few rods of it with cranberries, and then you will know by practical experience whether it is best to enter largely into the business or not. This knowledge would be worth to you more than all the communications which I could write during the time you were making the practical test.

Nearly every correspondent desires to know where he can get good vines and at what price. I very much regret that I am unable to answer this question. I have two varieties one of medium size, high color, keeps until August, but rarely produces more than two bushels to the rod; the other is very large, colors late in the autumn after harvesting, keeps well and sometimes produces from three to four bushels to the rod. I have none which I wish to dispose of, or perhaps I might more truthfully say I could not attend to the packing of the vines for transportation, without drawing my attention away from a business which at present requires all my time as well as attention. Those who have cranberries in their vicinity had better examine them and select those which are known to be productive.

The vines in good locations will produce a fair crop the third year after transplanting, if the land is not too rich, and is covered with six inches or more of sand. They will continue to produce fair crops ten or twelve years. It is then usually necessary to reset the vines. Such plantations as have come under my observation have ceased to produce large crops where the vines cover the ground so thick that the new horizontal runners are so far from the soil as to prevent them from sending out roots which seem to be necessary to support the short perpendicular shoots on which the fruit is produced.

My knowledge in this business is derived from a variety of experiments tried on a small scale, a large part of which were conducted by my father. I have seen him grow cranberries of excellent quality on hills composed of sandy loam, but not profitably, nor did he find it profitable to cultivate them on springy land with clay bottom. It is only on such land as I described in my former article that we have found it profitable. In conclusion I would say to every one who has land which he thinks is adapted to the growth of this excellent fruit, try a few rods, and if successful enlarge each year until your land is covered.

E. HERSEY.

Hingham, Mass., April 24, 1869.

For the New England Farmer.

MOTHS.

Can you or any of your readers tell how to destroy moths, if you can you will oblige a constant reader. B. F.

Jacksonville, Vt., 1869.

Will you give us the habits of the moth, and the time when we should protect our furs and woolen goods from their depredations? MRS. D. A. S.

Schoolcraft, Michigan, 1869.

REMARKS.—In reply to the above we copy the following from Prof. Harris' *Treatise on Insects*:—

The various kinds of destructive moths found in houses, stores, barns, granaries, and mills, says Mr. Harris, are mostly very small insects; the largest of them, when arrived at maturity, expanding their wings only about

eight-tenths of an inch. The ravages of some of these little creatures are too well known to need a particular description. Among them may be mentioned the clothes-moth (*Tinea vestianella*), the tapestry or carpet-moth (*T. tapetzella*), the fur-moth (*T. pellionella*), the hair-moth (*T. Crinella*), and the grain-moth (*T. granella*), with some others belonging to a group, which may be called Tineans (TINEADÆ).

The Tineans, in the winged state, have four short and slender feelers, a thick tuft on the forehead, and very narrow wings, which are deeply fringed. They lay their eggs mostly in the spring, in May and June, and die immediately afterwards. The eggs are hatched in fifteen days, and the little whitish caterpillars or moth-worms proceeding therefrom immediately begin to gnaw the substances within their reach, and cover themselves with the fragments, shaping them into little hollow rolls and lining them with silk. They pass the summer within these rolls, some carrying them about on their backs as they move along, and others fastening them to the substance they are eating; and they enlarge them from time to time by adding portions to the two open extremities, and by gores set into the sides, which they slit open for this purpose. Concealed within their movable cases, or in their lint-covered burrows, they carry on the work of destruction through the summer; but in the autumn they leave off eating, make fast their habitations, and remain at rest and seemingly torpid through the winter. Early in the spring they change to chrysalids within their cases, and in about twenty days afterwards are transformed to winged moths, and come forth, and fly about in the evening, till they have paired and are ready to lay their eggs They then contrive to slip through cracks into dark closets, chests and drawers, under the edges of carpets, in the folds of curtains and of garments hanging up, and into various other places, where they immediately lay the foundation for a new colony of destructive moth-worms.

Early in June the prudent housekeeper will take care to beat up their quarters and put them to flight, or to disturb them so as to defeat their designs and destroy their eggs and young. With this view wardrobes, closets, drawers, and chests will be laid open, and emptied of their contents, and all woolen garments, and bedding, furs, feathers, carpets, curtains, and the like, will be removed and exposed to the air, and to the heat of the sun, for several hours together, and will not be put back in their places without a thorough brushing, beating, or shaking. By these means, the moths and their eggs will be dislodged and destroyed. In old houses that are much infested by moths, the cracks in the floors, in the wainscot, around the walls and shelves of closets, and even in the furniture used for holding clothes, should be brushed over with spirits of turpentine. Powdered black pepper, strewed under the edges of carpets, is said to repel moths. Sheets of paper, sprinkled with spirits of turpentine, camphor in coarse powder, leaves of tobacco, or shavings of Russia leather, should be placed among the clothes, when they are laid aside for the summer. Furs, plumes, and other small articles, not in constant use, are best preserved by being put, with a few tobacco leaves, or bits of camphor, into bags made of thick brown paper, and closely sewed or pasted up at the end. Chests of camphor-wood, red cedar, or of Spanish cedar, are found to be the best for keeping all articles from moths and other vermin. The cloth linings of carriages can be secured for ever from the attacks of moths by being washed or sponged on both sides with a solution of the corrosive sublimate of mercury in alcohol, made just strong enough not to leave a white stain on a black feather. Moths can be killed by fumigating the article containing them with tobacco smoke or with sulphur, or by shutting it in a tight vessel and then plunging the latter into boiling water, or exposing it to steam, for the space of fifteen minutes, or by putting it into an oven heated to about one hundred and fifty degrees of Fahrenheit's thermometer.

For the New England Farmer.

"STERILITY IS LAID."

MR. EDITOR:—Since the appearance of the very encouraging pamphlet making proclamation as above, I have intended to write to you upon the subject.

I read and examined the pamphlet with deep and pleasant interest. It called up to memory various experiments made and conclusions arrived at, nearly or quite twenty years ago.

I was an attentive and close reader of the early volumes of Professor Mapes' "Working Farmer," in which appeared very nearly the same theory. The Professor's preparation of superphosphate of lime was said to contain all the elements necessary to make any poor land productive, if the physical condition of the soil only received proper care.

It appeared to me, without claiming high attainments in the knowledge of chemistry, &c., that the theory put forth could not be trusted to the extent of what it seemed to promise, aside from other agencies and powers. Altitude of a piece of land, its inclination towards or from the sun, its contiguity to natural electrical currents, its exposure to atmospheric currents and all similar influences and peculiarities have each a power upon it as a productive agent, as also the physical condition of the soil has; but still another item is indispensable in the account, in known cases. Our cereal annuals, without a supply of decomposed carbon in the soil for food, will fail to mature grain.

I had taken a hint from the "Genesis" of

Scriptures, where the plant without seed is represented as preceding the seed-bearing plant. I tried various experiments, all of which proved that only the stalks and foliage of plants can be produced by such compounds as were recommended, impliedly at least, for a complete production. In one case I selected a very light soil, unquestionably free from injurious acids, of good inclination and of favorable altitude, but containing so little carbonaceous matter as to be just suited for my experiment. I ploughed it well, and dressed bountifully of the compound, which it was said would do the needful to secure a crop anywhere, and planted with Indian corn. It came up quickly, looked beautifully, and fifty days from planting gave promise most cheering. The season was favorable, but an eighth of an acre yielded not more than one peck of corn, at harvest time. The reason existed in the nature of the case. Nature, with all her ample powers, cannot create.

Another experiment with the same compound, for the purpose of producing fodder without grain, was in the highest degree successful. On a cold soil, where the production of fodder only was intended, a dressing of green manure was first applied, and then on one part the same special compound before referred to was added. The difference in favor of the special addition was as thirteen and a half to one.

A safe motto ever is, "Prove all things, and hold fast that which is good."

Lee, N. H., 1869. A. G. COMINGS.

For the New England Farmer.

CEMENTING BARN CELLARS.

Mr. D. L. Tolman asks for definite information on the subject of manure vats. As I have cemented two barn cellars to hold manure, with what I consider complete success, I will endeavor to reply.

First, I used the common Hydraulic Cement in both cases. In the first instance, I employed a mason to superintend the work, and followed his directions to the letter, which were, first, to level off the bottom of the cellar and then make it very hard by pounding it with a ram, such as is used by pavers; then to put down three inches in thickness of a plaster composed of one part cement and three parts gravel, and water sufficient to make it as thick as mortar for plastering. Mix in small quantities, and use it quick.

The second one I did myself in my own way. This cellar bottom was the loosest of fine sand, which it would do no good to pound. So I just raked it off level and applied the plaster upon that soft surface, mixed as follows: I procured two or three cart loads of gravel stones, all the dirt removed by screening, ranging in size from as large as my fist down to the size of a filbert. Then I took one bucket of cement and two of good sharp sand or gravel, with no loam in it, and eight buckets of the stones and applied as before, three inches thick, smoothing off the surface with a little mixed up without the stones, so as to make good shovelling. I protected the edge where I drove in and out with the cart by laying down a row of granite stone across the whole front of the cellar to keep the edge of the cement from crumbling.

This last, as you see, is much cheaper; but either one is so hard that you can drive a forty-bushel cart piled full of manure across it and make no more mark than on a solid rock.

In cementing a place twenty by thirty feet, I used but thirteen and one-half casks of cement, and did the work in two days with a cheap day laborer to assist me.

If the common cement is properly mixed, I think Mr. Tolman will not lose much manure by its percolating through the cellar floor.

J. G. HUBBARD.

Derry, N. H., May 3, 1869.

PROF. VILLE'S COMPLETE MANURE.

A few years ago farmers were led to expect that they should be able to learn just what material or substance they should apply to their run-down fields to make them produce good crops, by having a specimen of their soils analyzed by the chemists. These expectations have not been fully realized.

A few years since, M. George Ville, a professor in a Paris institution of learning, undertook to analyze soils by the growth of the plant itself, instead of the chemist's crucible. Beginning with pure burnt sand, instead of soil, placed in china pots, he planted in each a few kernels of wheat. All were kept moist with distilled water. To one of these pots he added one kind of pure chemical substances, to another, another kind, and so on, to ascertain which substance or substances made the plant grow best. After experimenting in pots and fields some fifteen years he came to the conclusion that a "Complete Manure" might be made of four ingredients, viz:—

1. Nitrogen, in the state of nitrate of soda, or sal ammonia;

2. Phosphoric acid, in the state of phosphate of lime;

3. Potassa, in the state of carbonate of potassa; and

4. Lime, in the state of caustic lime.

A little pamphlet written by John A. Riddle, Esq., of Manchester, N. H., embracing the principal conclusions of Prof. Ville, has been

extensively circulated in New England, and we have been looking for the results of experiments with the complete manure by Yankee farmers, which should determine its practical value on our soils.

The following experiment with this fertilizer on potatoes has been reported by a correspondent of the *Mirror and Farmer*, "D. G." of Hollis, N. H.

Last spring I measured off a strip of land containing seven square rods, and divided it so as to have one rod in each plat, and planted them as follows, with the same number of pounds of potatoes to each plat for seed:—

No. 1. Without any fertilizer.

No. 2. Was a compound of my own getting up, which I describe hereafter.

No 3. Prof. Ville's "Complete Manure," as follows: nitrate of soda, 3 lbs.; carbonate of potash, 2 lbs. 2 oz.; superphosphate of lime, 2 lbs. 2 oz.; quicklime, 9 oz.

No. 4. Same as No. 3, with the nitrate of soda left out.

No 5. Same as No. 3, except the carbonate of potash (pearlash.)

No. 6. Without superphosphate of lime.

No. 7. Without quicklime.

The yield of the several plats was as follows:—

No 1 produced	21½	pounds,	or	57½	bushels	per	acre.
" 2 "	37½	"	"	100	"	"	"
" 3 "	58½	"	"	156	"	"	"
" 4 "	21½	"	"	57½	"	"	"
" 5 "	34½	"	"	92	"	"	"
" 6 "	34½	"	"	92	"	"	"
" 7 "	31½	"	"	87½	"	"	"

The first question will doubtless be, "Did it pay?" Not by a long chalk, if you count the cost of the *doctor stuff*, in proportion to the yield,—but it did in this way: I found out just what that field wants to grow a crop of potatoes. In other words, the experiment gave an analysis of the soil, much cheaper than the chemist would have done it, and much more to my advantage.

Compound No. 2 was made as follows; 1 cask of lime, slacked with 8 pails of water, in which a bushel of salt had been dissolved. This was spread on the floor, and 1 bushel of salt, about 3 bushels of plaster, 4 of ashes, ½ peck of copperas, and about 5 or 6 bushels of hen manure mixed together; the plaster and hen manure should be thoroughly mixed before putting it with the other ingredients. This will make a very strong compound and a good one for potatoes, but should be spread considerably if put in the hill. It should be kept in barrels, tightly covered up until used, as it is very strong in ammonia. I think potatoes less liable to rot when planted with this mixture than with manure, and of better quality.

We think that several of the ingredients of Compound No. 2, are what chemists call incompatible, and should not be mixed together. In an article published last week from the *Boston Journal of Chemistry*, Dr. Nichols gives some of the reasons for this opinion.

—The first class that graduated at the New Jersey Agricultural College consisted of seven young men, of whom one is a farmer, one a railroad engineer, one a mechanical engineer, one a geologist, one a mineralogist, and two are teachers.

AGRICULTURAL ITEMS.

—John Johnson, the father of upland tile draining in this country, lives to see within the State of New York fifty-two factories of tile drains.

—The *Prairie Farmer* says a Kentucky woman feels more pride in having the first green peas than the first spring bonnet.

—A very full stomach in a horse always crowds his lungs so that he cannot go fast, or work hard, without danger. Let this be always kept in mind.

—Gas tar mingled with the white wash applied to the interior of a hen house, at the rate of one gill to a pailful, it is said will disperse the lice.

—The *Utica Herald* says, if the statements of aggrieved farmers are to be believed, in no State is swindling in commercial fertilizers carried on to so great an extent as in New York.

—F. C. Warren, of Reading, Vt., recently lost a valuable cow from feeding her with hay in which was mixed the dried stalk and leaves of the common meadow poke plant.

—A correspondent of the *Prairie Farmer* says fence posts covered with boiled oil thickened with pulverized charcoal will make them last longer than iron.

—New milk applied to the eye-ball of cattle with chaff in their eyes, it is said by a correspondent of the *Rural New Yorker*, will remove the chaff and cure the eye.

—Would you force garden plants and have the earliest green peas? Sprinkle every forty-eight hours with liquid manure made by leaching yard manure, ashes, guano and bone dust. If the stuff is strong, dilute largely.

—A wealthy gentleman in New York died of the glanders, lately. He caught the disease from a favorite horse. This is the fourth death of a human being from glanders, since the organization of the New York Board of Health.

—A correspondent of the Utica *Herald* finds nothing equal, as a destroyer of lice on cattle, to a strong suds of soft soap and rain water, to which is added common salt. This is applied by rubbing thoroughly over the animal.

—A correspondent of the *Rural New Yorker* says he has a young horse that for two winters was fed upon nothing but barley straw, and that, too, with chaff in. He considers barly straw, if bright and well taken care of, as good or better than poor hay for any animal.

—The editor of the *Gardener's Monthly* says: "There is nothing that will make as good a border as Box, or some of the dwarf Arborvitæs. Of flowering plants, the best is the Perennial Candytuft. This will flower in April. The mountain or Moss Pink—*Phlox subulata*—is a pretty edging.

—Careful observation of the habits of the robin by an ornithologist in Massachusetts has proved that he is beneficial one hundred and forty-two

days, injurious sixty days, and harmless one hundred and sixty-three days. If there is one reason for killing him, there are three for sparing him.

—Market gardeners, who use the most effective manures without regard to cost, are small purchasers of guano and the bi-chemical fertilizers. *They* depend on compost made of vegetable refuse, thus creating a condition of soil similar to that of fresh cleared and heavy timbered lands.

—A correspondent of the *Bee Journal* plants catnip along the fences and in out of the way places where weeds ordinarily grow, for forage for bees. He says the bees work on it in all kinds of weather. A slight frost does not kill it as it does other flowering plants, and it is in bloom from the time it first makes its appearance until killed by the frost in the fall.

—To keep up the fertility of our pastures it is evident that we must do our best to check the growth of such vegetation as is rejected by stock as well as that which would injure stock, if it were eaten. But it is not enough to destroy the useless and injurious plants; we must encourage the growth of the valuable ones. How shall these objects be accomplished?

EXTRACTS AND REPLIES.

BUNCHES ON THE THROATS OF OXEN.

I have a pair of valuable oxen that have large bunches or boils between the windpipe and jugular vein; not attatched to either, but simply in the flesh, and are sore. Otherwise well and hearty. I have not had them but a short time, and have not worked them. The bunches are located where the bow could not have been the cause of them. Will you please to inform me through your valuable paper what to do for them.

April, 1869. YOUNG FARMER.

REMARKS.—From the indefinite description given above, we can form no satisfactory opinion with regard to the nature of the disease. We should think it was an enlargement of the glands rather than boils. Take one ounce of iodide of potash, dissolve in two quarts of water. Give each of them one gill twice a day, in their food or drink. When the feed becomes good, turn out to grass.

An English veterinary surgeon describes a tumor that is common on the necks of cattle in that country, which commences in one of the thyroid glands, and slowly but gradually increases in size, feels firm when grasped, but unlike those on your oxen, evinces little tenderness. The swelling continues until it maturates and discharges sometimes by more than one opening. But this discharge effects only a partial and temporary relief; and he says that he has often found it necessary to remove them by cutting them out very carefully. In their first stages he thinks they may be dispersed by the use of "iodurets." Some rub on a salve of soot, spirits of camphor, turpentine and soft soap; others soap, salt and tar; while others still have faith in the efficacy of rubbing alone, believing that friction excites a healthy circulation of the blood, which takes away the diseased and refuse matter which causes the swelling.

MEADOW SOFT GRASS, OR VELVET GRASS.—*Holcus Lanatus.*

I send to you three heads of a kind of grass that I have noticed among my hay for a few years past. I understand that it used to be called by the old farmers "Quaker's grass," and "Rhode Island grass."

Will you tell me its true name, and also where I can find the seed? I think it is a good kind to sow upon low ground.

H. A. KING.

East Taunton, Mass., May, 1869.

Meadow Soft Grass.

REMARKS.—The common and scientific names of the grass received are given at the head of this article. In his valuable book on "Grasses and Forage Plants," Mr. C. L. Flint gives the annexed illustration and the following description of the Meadow Soft Grass, both of which we copy by his permission.

"It has its spikelets crowded in a somewhat open panicle, and an awn, with the lower part perfectly smooth. The generic characters are, two flowered spikelets jointed with the pedicels, glumes boat-shaped, membranaceous, inclosing and exceeding the flowers; lower flower perfect, its lower palea awnless and pointless, upper flower staminate only, bearing a stout bent awn below the apex. Stamens three; grain free, slightly grooved.

"This species grows from one to two feet high, stem erect, round, root perennial, fibrous, leaves four or five, with soft, downy sheaths, upper sheath much longer than its leaf, inflated, ligule obtuse, joints usually four, generally covered with soft

downy hairs the points of which are turned downwards, leaves pale green, flat, broad, acute, soft on both sides, covered with delicate slender hairs. Inflorescence compound panicled, of a greenish, reddish or pinkish tinge; hairy glumes, oblong, tipped with a minute bristle. Florets of two paleæ. Flowers in June. Introduced.

"This beautiful grass grow s in moist fields and peaty soils, but I have found it on dry, sandy soils on Nantucket, and specimens have been sent me from Boxford and other places where it grew on upland fields, and was cultivated with other grasses. It is productive and easy of cultivation. It is of but little value either for pasture or hay, cattle not being fond of it. When once introduced it will readily spread from its light seeds which are easily dispersed by the wind. It does not merit cultivation except on poor, peaty lands, where better grasses will not succeed. This grass loses about .63 of its weight in drying, and the hay contains about 1.92 per cent of nitrogen."

OSSEOUS TUMOR.—SWELLED NECK IN SHEEP.

I wish to inquire what is the best treatment for a bunch on the upper jaw of a valuable heifer I have, three years old. It is nearly against the front grinders. It is about eight weeks since I first discovered it. Thinking it proceeded from an ulcerated tooth, I attempted to open it about ten days ago and found a substance beneath the skin that seemed like bone, through which the knife refused to pass. Blood flowed quite freely, and I have done nothing since, as I did not know what to do, fearing it was a species of wen, though I never heard of a wen being on the upper jaw. The bunch is about the size of half a hen's egg, or a little thicker.

I would also like to inquire in reference to a disease amongst my sheep. For two springs previous to this, some of my sheep have been affected with a swelling under the throat or under jaw, very soft and loose. Two years ago I slaughtered one to ascertain the cause and found it to be a watery secretion, but learned nothing further as to cause or cure. At times it would be large enough to contain a pint, and then perhaps the next day it would be gone, to return on the following day. Can you or any of your numerous readers give me any information on the above queries?

So. Scituate, R. I., May 1, 1869. J. H. FIELD.

REMARKS.—Some years ago one of our correspondents, Mr. Milton Smith, of Middlefield, Mass., cured a "wen" on a steer, by extracting an ulcerated tooth. But from your description we fear that the bunch on your heifer's jaw is the effect of a bone disease, for which we know of no cure, other than to fatten her for the butchers.

Neither can we give you much information in relation to the disease among your sheep. Dr. Randall has a chapter on swelled neck in lambs, in his book on Sheep, in which he regards it as analogous to goitre in the human race. A bandage wet with camphor dissolved in alcohol applied to the swelling, was beneficial in the case of lambs, as was also iodine. Among the causes of goitre in people in Europe, the use of snow water, insufficient sunshine, emanations from clay-soil, &c., have been suggested. A farmer in Michigan, who lost many lambs by goitre, thought he improved the condition of his flock and avoided the disease by giving them more exercise, and a daily run in an old meadow, where they could get some grass, on pleasant days in winter. Will some one of the readers of the FARMER tell Mr. Field what to do for his heifer and his sheep?

BARREN FRUIT TREES.

I have a very thrifty pear tree which is about eight inches in diameter, and about twenty feet in height; it blossoms full every spring but bears no fruit. I wish to know what can be done to make it bear fruit? A. L. HOWARD.

Corinth, Vt., April, 1869.

I have now a number of Baldwin trees, eight to ten inches in diameter, which have never borne a bushel of apples per tree. Is there a remedy?

Shoreham, Vt., April 26, 1869. Q. C. RICH.

REMARKS.—Such cases as those mentioned above are not uncommon. The cause of barrenness is probably not always the same. It is not apparent, either, as a tree may stand on the same kind of soil, in the midst of others of the same age and variety, grow well and appear well, and yet produce no fruit! Who can tell why? Is it not very much so with animals? Our experience confirms it.

There is a very considerable difference in the age at which pear trees come into bearing. Some will produce fruit in the nursery when they are but three or four years old; others not until they are five and six; while the Dix rarely fruits until it is nine years old. Perhaps the tree to which our correspondent alludes is of that variety. This is the case, in some measure, with apple trees. But even when they have reached the age when it is supposed they ought to blossom and fruit, they sometimes fail to do so for several years in succession.

One cause of this is, occasionally, that the tree stands in very rich soil, and acquires a habit of making wood luxuriantly. Like some other things, this habit becomes a second nature, and is hard to be broken up, so that it grows somewhat extravagantly each year, but never puts on its beautiful garniture of fragrant blossoms and delicious fruits. When this is the case, cropping the soil heavily for a year or two will divert the sap in a measure from the tree, and it will produce fruit. Another practice is to remove the soil from the base of the tree—a circle large or small, according to the size of the tree—and fill the excavated place with another kind of soil. If you take away a heavy granite soil, put back a sandy loam, or the reverse.

The law of nature is, for every living thing to reproduce its kind. It holds good in trees as well as in fishes, who stem the swift currents of rivers and leap over rocks and other impediments to reach a place where they can properly deposit their eggs or spawn, and thus insure a perpetuity of their kind. The law is universal, and when it is not in operation, in tree or fish, there is a cause for it. What that cause is in your trees, no one

probably precisely knows. An examination of the trees might suggest a cause, though it is rather doubtful.

Apple or pear trees, we may suggest, do not thrive well in low, wet grounds. In such places, they will not throw roots deeply into the soil, and therefore do not probably get a supply of the food which they need. They do as much better on a well-drained soil as corn, roots or grain do.

TAYLOR'S PATENT SULKEY HORSE RAKE.

While visiting State Fairs last fall we noticed an Ohio Horse Rake that attracted much attention. The teeth are cast steel, spring temper, every inch a spring, from one end to another, and being oval are stronger than any round teeth of the same weight. A spiral spring over each tooth allows it

to raise or lower to accommodate itself to uneven ground. Each tooth is perfectly independent, and can be taken out or put in in an instant. It rakes perfectly clean without scratching the ground or raising up dust to injure the hay. It is so simple and easily operated that a boy who can drive a horse can manage it as well as a man. The rake is thoroughly made throughout, with extra high wheels. F. F. Holbrook & Small, Eastern agents, 10 South Market St., Boston.

DURHAM STOCK.

I have sold my Thoroughbred Short-horn Durham bull, out of Madonna 5th by John Bull, 3025, to Edward C. Pierce, of Alstead Centre, N. H., formerly of Hinsdale, Mass. The first year Mr. P. was in Alstead he preferred to let his cows go farrow, rather than to couple them with anything the neighborhood afforded.

My yearling steers weighed at a year old 1636 pounds, after being driven three miles in snowdrifts and mud. I have a pair of this spring calves that are as good, and some say better, than my yearlings were at the same age. They are by the same sire and from the same mothers.

Some think that Durham cattle must have extra keeping or they will not grow as other breeds will. But I find none gain as much on the same feed. The smartest working oxen I ever owned were grade Durhams. The bull I have just sold I bought at one year old, when thin in flesh and had never had any extra feed. I turned him to pasture with my cows and took him up nights and gave him a quart of meal night and morning for two months, and then I stopped giving the meal, as the feed was good. During the season he served one hundred and ten cows, and more than doubled his weight in less than a year. I bought a mate for him last October, and have done my work with them until I sold him. A smarter drawing ox I never owned. He is now three years old and weighs 1500 pounds.

Is not the stock from an animal kept in this manner better than one grained high and kept idle? In my opinion it is, and I should like to hear from others on the subject.

WILLIAM F. LOOMIS.

Langdon, N. H., May 3, 1869.

CURRANT WORMS.—CROWS.

I have for several years been entirely successful in keeping worms from currant bushes, and bugs and other insects from vines, &c., by dusting them with powdered white hellebore.

I have also protected my corn fields from crows by soaking some corn in water into which a little strychnine is mixed. The death of a few individual crows from poisoned corn picked up in a field is accepted by the whole tribe as a sufficient warning, and though they may fly over it every day not one will put foot upon it. ELIJAH MYRICK.

Groton Junction, Mass., May, 1869.

REMARKS.—While we thank our correspondent for his suggestions, we must caution our readers of the great danger in having these poisons about the house or the field. Strychnine especially is a fearful poison. Some of our correspondents were successful in ridding their currant bushes of worms by sifting lime, ashes and plaster upon them, last season.

LARD FOR PIN WORMS.

At the time I read the article in the FARMER of January 2, MONTHLY page 87, on lard as a "remedy for intestinal worms," I had a child that was badly troubled with pin worms. We had tried all the remedies we knew of, and had just got a prescription from a physician. But as I dislike to give powerful medicines, which though affording temporary relief often result in permanent injury, I was glad to try the lard. After trying it one week, all symptoms of the worms disappeared. Thanks for that simple remedy. B. L.

Hartland, Vt., May, 1869.

Having tried the remedy published in the FARMER from the *Boston Journal of Chemistry*, for the *Ascarides* or pin worms, which was based on the idea that they breed externally, and that by oiling the external parts they were unable to do so, and would disappear in a week, I comply with the request that the result of experiments should be published, by saying that I have entirely relieved myself of a most uncomfortable annoyance, and that I wish to thank Mr. E. C. Haserick, of Lake Village, N. H., to whom the discovery, so important to man and beast, is ascribed. I consider this information worth the cost of several years' subscription to the FARMER.

ONE OF THE AFFLICTED.

Bethel, Conn., April, 1869.

SICK PIGS ON INDIA WHEAT STRAW.—SOUR MILK FOR LICE ON CATTLE.

The disease of which your Woodstock, Vt., correspondent's pig died, I think was caused by the bedding of India wheat straw. Some pigs that I bedded with India wheat straw were sick in the same way, and got well as soon as I put them on other straw. Sour milk or buttermilk is the best thing I ever tried to kill lice on cattle. On a warm day, wash a lousy calf all over with it and it will kill every louse and clean the skin of scurf; benefitting the calf in two ways and without the least injury. B. L.

Hartland, Vt., May 1, 1869.

THE MORGAN HORSE "VERMONT."

In consequence of the well deserved popularity of Vermont horses abroad, fears have been expressed of a deterioration in the quality of the home stock by the sale of too many of the choicest animals. That there is danger of such a result we believe many of her most intelligent breeders are fully satisfied, and we hope they will carefully guard against it. As evidence that the good horses are not all suffered to leave the State, we are informed that the animal, of which the above cut is as good a representation as could be made from a photograph, has been owned in Bradford, Vt., for sixteen years, and that his colts have commanded better prices than those of any horse ever kept in that portion of the valley of the Connecticut River. He is still owned by J. H. Peters, Esq., of Bradford, Vt.

USES OF MILLET.

In consequence of the high culture of arable lands, many farmers are enabled to winter more stock than they have pasture or "fall feed" for. Instead of fifteen hundred or two thousand pounds of good hay per acre, it is not at all uncommon now to get a ton and a half and two tons per acre, as an average, on some good farms. In extraordinary cases three tons, and up to five tons are sometimes secured. We have known the last amount to be got from an acre in a single season,—from one acre at three cuttings.

In order to eke out the grazing period, the stock is turned upon the mowing fields in autumn, which are considerably injured by being fed too close. This process injures the roots of the grass by preventing them from penetrating deeper into the soil, throwing out new fibres and generally strengthening themselves. This is one reason why so much grass is winter killed. The theory is probably a correct one, that the roots of plants must bear a pretty nearly equal proportion to the tops, in order that they may be progressive and vigorous. If such is the fact, it is not strange that the roots of grass die out, whose leaves have been eaten off perhaps a dozen times in the course of the autumn.

Where a heavy crop of grass has been taken from a field, and a second or third crop springs up, it is no injury to turn stock upon it and allow them to graze it moderately. Indeed, it is perhaps beneficial, as a dense mass of aftermath if covered with snow for many weeks in succession, sometimes rots the grass and the crowns of the roots, so that large numbers die.

What is needed, then, is something to feed the stock upon when the pastures are exhausted by grazing them, or by drought or any other cause.

To accomplish this, resort is had to Indian corn, by sowing it thickly in drills, at different periods, and cutting and feeding it while in a green and juicy state. This is of easy culture, is quite a certain crop, and is said to be nutritious and causing a free flow of milk. What is not needed in this way, is usually dried and used as winter fodder. Sweet corn is said to be far preferable for this purpose.

Various other plants are employed for the same purpose, such as oats, Hungarian grass, rye, clover, &c. One among them, and of great merit, is *millet.*

There are several varieties of millet, but in this connection we shall speak of only one, the "common millet," such as has been cultivated in New England for many years. It rises with a reed-like channeled stalk, from

three to four feet high; at every joint there is one reed-like leaf, joined on the top of the sheath, which embraces and covers that joint of the stalk below the leaf, and is clothed with soft hairs; the leaf has none, but has several small longitudinal furrows running parallel to the midrib. The stalk is terminated by a large, loose panicle hanging on one side. This variety is one of the smallest, has much leaf and the head branches out something as our red top grass does, and affording a great deal of fine, juicy fodder.

Mr. Flint in his *Milch Cows and Dairy Farming*, says, "it is a very valuable crop for fodder in soiling, or to cure for winter use, but especially to feed out during our usual period of droughts. If designed to cut for green fodder, half a bushel of seed to the acre should be used; if to ripen seed, twelve quarts, sown broadcast, about the last of May or early in June. * * * It is very palatable and nutritious for milch cows, both green and when properly cured. The curing should be very much like that of clover, care being taken not to over-dry it. For fodder,—either green or cured, it should be cut before ripening. In this state all cattle eat it as readily as green corn, and a less extent will feed them."

This variety of millet is worthy of a more widely extended cultivation, for several reasons. It may be got into the ground a little after the hurry of Indian corn planting is over. What is not wanted for green fodder may be cured at a quarter part of the cost of curing fodder corn, and is more easily cut up and taken to the stock than corn. It may be cut with the scythe and pitched upon the cart as grass is cut and loaded. The plant being a small one compared with corn, there is less waste in its use.

It requires a good soil, such as will produce a fair crop of Indian corn.

WHY BEES SWARM.

The bee-folk are an intense people in their way, but with all their zeal and study, they are at loggerheads over the commonest concerns of the hive. At a recent meeting of the Michigan Bee Keeper's Association, which is reported in the *Prairie Farmer*, the question was asked, why do bees swarm? Which was discussed theologically, scientifically and naturally, after this sort:—

A gentleman present regarded this question of no practical importance. It was enough to know that bees do swarm. To inquire into the why of their swarming would be a waste of time.

Mr. Otis did not so regard the inquiry. He wanted to know the why, and should not rest until the problem is solved. The strongest instinct God has given to the honey-bee is the love of storing honey. This instinct is so strong that she will remove the young larva from its cells and destroy it, that she may make room for the gathered honey. But she does not thus destroy the brood unless crowded for room by an unexpected rich harvest of honey. It is to guard against the destruction of the brood that queen cells are started preparatory to swarming, which takes place as soon as one or more is sealed over.

The Creator has implanted in the queen bee such unparalelled hatred towards a rival that but one normal queen is permitted to live in a family of bees. This hatred is so strongly developed that she will make divers attempts to destroy a rival while yet in the cell. But the worker bees keep the cells guarded, which so exasperates the old queen by the time one or more is sealed, that she rushes from the hive to find a new home, being accompanied by the majority of the colony. These are, therefore, the reason why bees swarm:—

1st. The want of combs to hold honey.

2d. To save the destruction of the brood.

3d. The hatred between rival queens.

This fine theory was somewhat marred as follows:—

Dr. Conklin.—My bees do not always wait until they have *sealed* queen-cells. Two years ago I opened a hive of bees as soon as the swarm had left, and found no queen-cells—no, not even the signs of any being started.

Mr. Baldridge.—If I understand friend Otis rightly, he assumes that bees do not swarm until the hive is full of comb, and the comb is full of brood and stores. And not then, even, unless there is one or more cells sealed. Now, my bees swarm sometimes when the cavity is not more than two-thirds full. I think it is *natural* at the proper season for bees to swarm. As a rule, the cavity will be full, the combs well supplied with brood and stores, one or more queen cells sealed, and the flowers secreting honey rapidly when the swarm issues.

Mr. Moon.—My bees also swarm when the cavity is only part full. They also swarm when they have no queen-cells started. The cause is excessive heat. Bees will swarm at certain seasons of the year, when there is no apparent cause; in the honey season it is as natural for the bees to swarm as for the sun to rise or the tide to flow.—*Ohio Farmer.*

RICE, the great staple of South Carolina, the cultivation of which was confined to the river swamp lands, is now grown on the uplands. The seed of the swamp rice is sed.

DURABILITY OF HORSES.

PERHAPS one of the most important changes which indicate progress in agriculture, is the longer duration of some of our domestic animals. Fifty years ago, it was thought that a cow that had reached eight years had passed into old age, and must be turned to beef. So if a horse had got into his teens, he could not eat well, or if he could, he had passed the period when his services could be made profitable, and the conclusion was, that the poor old horse must die.

As a cow does not come to her full power of production until she is six or seven years old, and as there are three of these years when she does not pay for her keeping, the whole productive time of her life is reduced to some four or five years, if she is turned off at eight.

A horse should never be put to full labor until he has reached the age of eight years. He may do a little light labor every day after attaining the age of three years, and when past four, do much more than enough to pay the cost of keeping. But it is neither profitable nor expedient in any way to put him to steady labor on the road or on the farm, until he has reached the age of eight years. The first three years of his life ought to be a bill of cost, if he is to be sound to start with, and is expected to endure until he is twenty-five to thirty years of age.

A large number of all New England horses are spoiled before they are three years old, either by mistaken notions in feeding, by too quick movements on the road, or by too heavy loads on the farm. If in feeding, it is by one of two extremes—neglecting the medium course, and feeding high with too stimulating food, or too low, with damaged or innutritious hay. Clean, sweet fodder, regularity in feeding, and cleanliness and proper ventilation in the stalls, are absolutely essential in securing soundness in a horse. When these are observed, and the horse is properly managed in working him, he will endure from twenty-five to thirty years and prove a faithful and profitable servant. We have heard of instances where they have continued sound and serviceable much longer than that.

We know of horses now, that have been out of their "teens" more than ten years, that are smooth and entirely sound in wind and limb. They are in daily use, are strong, and if remaining idle a day or two, come from their stalls as "gay as a lark." It is a real pleasure to hold the reins behind such animals, because they are old acquaintances, are long and well-tried servants, and one feels safe himself, and feels that his family is safe, in driving them.

The complicated structure of the horse, and the artificial life which he lives, are matters which every good master will consider. In a natural state he would rarely, if ever, indulge in an exercise which would cause the perspiration to drip from his sides or trickle down his haunches. But this is no unusual occurrence under our hands, and too often when he is in this condition, he is made to stand still, uncovered, in a cutting blast that penetrates to the very bones, checking the healthy action of the skin, stopping the pores, and thus inducing disease in one form or another.

On the farm, he is often treated with the same culpable negligence. He is greatly overloaded, and after taxing all his powers to take the load to its destination, stands, uncovered, in the cold north wind until the load is discharged. This process goes on through the day, or for many days; heating and suddenly cooling the system, until the animal powers are so weakened that fevers, cramps, catarrhs, or permanent colds and coughs are seated so as never to be removed! No wonder that eight out of every ten horses that pass us are lame or diseased in some way. A sudden cold applied to the skin often brings on a derangement of the functions of the system which ends in what is called a surfeit.

As there must be several years in the life of a horse when he will be an expense to his owner, it is desirable that his usefulness be continued at as late a period as possible. This may be done by observing the foregoing suggestions, and many a valuable servant be continued for years beyond the period when it is supposed he becomes unprofitable.

—Prof. A. S. Packard, of Salem, Mass., thinks that insects injurious to vegetation may be most successfully combatted by rearing their parasites, or such insects as prey on those which attack our crops, and suggests that each State should appoint one or more insect commissioners whose chief duty should be the propagation of parasitic insects.

IMPROVE AND BEAUTIFY THE HIGHWAYS.

OUR public roads are designed not only to facilitate intercourse, but also to render travel and transportation safe and easy. In former times, when long stretches of road had to be made and kept in repair by a few people with limited means, we travelled patiently over rough and imperfect roads, but now that our population has become numerous, and comparatively wealthy, we are no longer required to make a virtue of necessity, but should add the conditions of ease and safety, and so far as practicable, should render travel pleasant and agreeable. None of our cities and towns should be satisfied with their roads being merely passable; they should be made safe and easy both for teams and for pleasure travel.

The town in which we reside has expended large sums upon its roads, and has roads that are generally thought to be in good condition, and yet we will undertake to say that there is not a mile of road in town upon which there is not one or more places where a carriage might be upset. A few years since a man was thrown from his wagon, by his wheel striking a rock not three feet from the rut, on a much frequented road, where many carriages daily pass, and the town had to pay more than two hundred dollars for damages. Another instance occurred in which a gentleman was driving a high-spirited horse over a piece of road, where a narrow road bed had been thrown up, leaving a gully upon the side. The horse suddenly jumped out of the road, and the gentleman was thrown out of the wagon and dislocated an elbow and fractured an ankle.

Even where there is sufficient space enclosed, we often find a road bed thrown up scarcely wide enough for two carriages to pass; with a bank upon the side, and a deep gully between the bank and the road bed, or stumps or rocks on the side of the path, or a cut through a ledge barely sufficient to allow a team to pass, with the broken ragged rocks of the ledge protruding within a few inches of the wheels. Then we often see on the ascent of some steep hill a sort of canal worked into the face of the hill, just wide enough to allow a carriage to pass, the excavated soil being carried on to low ground at the foot, and built up into a road bed, eight or ten feet wide, with a deep gully on each side.

Now can travel on such roads be called safe, especially as they are passed at all times of the night as well as day? And yet how many such instances are found in all our towns. The travelled way on most of our roads should be made wider. In fact, the whole space enclosed as a road should be made level, or at least so level that it would be impossible to upset a carriage, without some very unusual accident. Ploughing out the sides and throwing the soil into the middle of the road, so generally practiced on country roads, is a custom attended with no small danger, and should be discontinued. The leaving of banks one, two or three feet high, by the sides of the travelled way, is a dangerous practice, as a frightened or unmanageable horse may readily run one wheel upon it, and upset a carriage. Roads should be carefully cleared of boulders and stumps and logs, and not used as depositories of lumber, broken carts, or other decayed farm implements, and every obstruction that can endanger carriages by running upon them. The absolute safety of travellers requires more attention to this subject than is usually given to it.

When roads have been made passable and safe, then the ease of draft must be attended to. In constructing a new road, all the conditions necessary to a highway should be regarded. Roads should not be made of common soil or loam, but of some material that will become compact and hard, and firmly keep its place. It can be made to keep its place only by proper drainage. That will prevent it from becoming gullied by the wheels.

A road for a distance of ten miles may be a good road; that is, most of it is good. But a few places it that distance of perhaps only a rod or two each of heavy sand, in which the

wheels of a loaded team sink over the felloes, or two or three sharp ascents in that distance make the addition of an extra horse necessary to haul a load to market. Were every part of the road as good as nine-tenths of it are, two horses could draw a load over it that now requires three. This diminishes the farmer's profit to the extent of the cost and keeping of one horse. It is the hard spots in the road that strain and injure both team and carriage. If the spots of heavy sand or deep mud and the sharp pitches in our roads were once effectually repaired, we fully believe that one-fourth at least of the horse power now used upon them might be dispensed with, and a large portion of the annual expense of repairs saved. For a road once well made becomes a permanent institution, and is easily and cheaply kept in repair. This is a very important matter to the farming interest, which has to bear the chief burden of repairing country roads.

In a large portion of the Eastern States, we have arrived at that degree of wealth and density of population which justifies attention not only to the safety and ease of travel, but also to the condition of the enclosing fences and borders. These should be pleasant and agreeable to the eye of travellers. The abuttors on our roads should feel a pride in keeping the fences in a neat and tidy condition. Tumble-down walls and broken fences should no longer be suffered by the road-side.

A substantial faced stone wall is undoubtedly the best fence for the road-side in most parts of New England. We have in our mind two gentlemen who have within the past year built a mile of such wall upon the road-side. The walls are straight upon the face, and of uniform height, rising in regular curves over the inequalities of the ground, and present to the passers a beautiful appearance,—if beauty may be predicated of a stone wall; and so far, at least, as fitness is an element of beauty, we think it may. Good walls indicate not only thrift, but good taste and public spirit in their owners, and not unfrequently add more than their cost to the value of their estates.

There is more attention paid to this subject than formerly, and it indicates increasing intelligence and good taste in our farming population. In many villages ornamental trees are being planted by the road-side, and are adding annually to their beauty and attractiveness. Why should not this be done outside of the village limits, in all parts of our towns? Why should not every farmer, as some have already done, plant trees upon the road passing his own premises? The practice would add much to the good appearance of their farms and dwellings, and to the pleasure of travelling upon our highways, and also provide a growth of timber that would be of great value in the future. Let trees be selected that are suited to the soil, and properly protected, and the work is done. Our children, as they enjoy the beauty and shade, will bless the memories of those who planted them.

OREGON.

We have received the first number of the *Willamette Farmer*, published weekly, at Salem, Oregon, by A. L. Stinson, at $2.50 per year,—John Minto, editor. It is a fair sized sheet of eight pages, and is better filled than almost any other first number of an agricultural paper that we have ever seen. The first sentence in its first column, "The great want of Oregon is a home market for her products," expresses a truth by no means local, but one which is not sufficiently appreciated by farmers generally, in Oregon or elsewhere. The writer proceeds,—"Oregon needs consumers. She needs a population devoted to other than agricultural pursuits. Her grain fields, teeming with superabundant breadstuffs, yield but a poor profit to the farmer, after deducting the heavy expense of transportation in search of a distant and too often uncertain market. The limited home demand will not permit the transformation of grain into flesh by feeding it to animals, as in other countries. Lands do not increase in value, because profits do not result from investments therein."

These are words of wisdom,—the teachings of actual experience in a new country, which are seldom appreciated by emigrants from old manufacturing and mechanical sections, until after they have tried it.

The last column of this paper contains a very neat report of markets at home and abroad. At Salem, March 1, best wheat 65c, oats 49 and 50c, potatoes 37 and 50c, lard 10 and 15c, flour $4 and 5; eggs 25c, &c.

The past winter we judge from several paragraphs has been unusually mild. It is remarked that "in town and country many have commenced gardening, and that the weather during the past ten days (in March) has been almost equal to the warmest of May." Yet it is said that "the more than ordinary length of last year's dry season, made short bites of this winter's grazing, and but for the extraordinary mild weather we have had, many animals that are compelled to shift for them-

selves would have succombed and been lost. As it is, stock of the larger kinds are thin, except where they have received attention and feed. Sheep are in tolerable condition and good heart." It is also remarked that during the past month (February) the ploughs have been going briskly, and are still going, preparing for spring crops." It is said that owing to the late setting-in of the autumn's rain, not more than one-half the usual amount of wheat was sown last fall.

The editor alludes to the scarcity of good cows, to the lack of attention to their management and care, and believes that those who have suitable land—very much, he admits, is unsuitable—will find a dairy quite profitable. Drovers pay four to eight dollars for calves, ten for yearlings, fifteen for two-year-olds, and about twenty dollars for cows, in store condition; sheep about $1.50 per head, with half that value of wool on their backs.

We also notice among the many appropriate articles which fill the columns of this first number of the *Willamette Farmer*, the commencement of a series of articles on the agricultural and geographical statistics of Oregon, beginning with Clatsop County, which has the Pacific Ocean for its western boundary and the Columbia river for its northern. This part of the State, as you approach it from the water, has a rough and forbidding appearance. The coast mountains and a range of hills and bluffs along the river shuts out of view the beautiful valleys, which have a rich soil, adapted to grass, grain, vegetables, fruit, &c., while coal and iron are known to exist, though mines have not yet been developed. Extensive tracts are still unoccupied, not even surveyed. This section is very healthy, even fever and ague being unknown. Here the thermometer seldom indicates over 75 degrees in summer or under 15 in winter. The timber is fir, cedar, spruce, hemlock, ash, maple, alder, &c. In mineral wealth it is claimed that Oregon is not one whit behind California.

But, really, we did not propose to copy the whole of this paper by way of "notice," but we find so many good things in it, so much information in relation to the resources of this far-off portion of our great country, that we hardly know where to stop. If any word of ours could reach the people of Oregon or those interested in its prosperity, that word would be to advise them to sustain this new enterprise by their money and their pens, as it is very evident it is now in the hands of men who have the right idea of what an agricultural paper should be. But in these days "brick is not made without straw," nor good agricultural papers without the proper material, which farmers alone can furnish.

POISONOUS FLOUR.—Last year considerable excitement was occasioned in the State of New York by the fact that all who ate of a certain lot of flour ground in that section were more or less poisoned. This was accounted for at the time on the hypothesis of a small quantity of lead having been ground up with the flour. In the *American Entomologist* for May, Dr. Walsh, suggests that the flour was made from a lot of very buggy wheat. He says that the black Snout-beetle,—*Sitophilus granarius*,—about one-fifth of an inch long, which is commonly found in granaries, has been used successfully at the South as a substitute for the Spanish Blister-beetle—*Cantharides*, which are known to be fatally poisonous when taken internally. He also quotes the opinion of a medical man that these grain weevils were about as poisonous as the *Cantharides*.

NEW PUBLICATIONS.

LAND AND FRESH WATER SHELLS of North America. Part I. Pulmonata Geophila. By W. G. Binney and T. Bland, Smithsonian Institution. Washington, 1869.

In one of his articles on insects, Dr. Walsh, of the *American Entomologist*, says "it is astonishing how the great majority of mankind go through the world with their eyes shut." Here is a volume of 328 pages, illustrated by about three times as many cuts, mostly drawn by E. S. Morse, of Salem, Mass., all about the snail and other shells found on the land and in the fresh water of North America. And yet how few of us think these little shells worthy of notice, or care to know anything of the history or habits of the beings which produced them. Did you ever see a snail eat? Mr. Binney says, "their natural food is vegetable; and the formation of the mouth and the organs with which it is armed seems to be peculiarly well adapted for cutting fruits and the succulent leaves of plants. The dental (tooth) edge of the upper jaw being applied against the substance to be eaten the semilunar (half-moon) rough instrument called the tongue is brought against it, cutting out and carrying into the mouth semicircular portions of nutriment. This operation is carried on with great rapidity, and the substance to be eaten soon disappears," although the snail has become with us a proverb of slowness. This important member,—the toothed tongue—varies much in different species, of which a great number of illustrations are given.

This work, however, is so strictly scientific that it will be more interesting to the student of natural history than to the general reader.

AGRICULTURAL EDUCATION.—It is generally understood that to be an expert in either chemistry, or geology, or physiology, or botany, or meteorology, or zoology, one must devote himself pretty exclusively to its study and practice. The talk therefore of acquiring a full knowledge of *all* these and several other sciences by a few terms at an agricultural college is so absurd as to create doubts in the minds of many as to the practical value of all agricultural education. But if old or young farmers can learn just enough of these sciences to understand the teachings of those who make them a

a profession, and to comprehend the facts and discoveries which are made by them, we think much practical good will result. In speaking of the chemical principles and operation of manures Dr. Nichols says, in his "Chemistry of the Farm and the Sea:"—"It is not necessary that farmers should be practical chemists to be successful in the employment of fertilizing agencies. A few simple principles furnished by chemistry, if well understood, and earnestly adopted, *will enable any one to appropriate to his benefit all the important facts unfolded by science* in respect to manurial applications," and we may add in respect to any other subject. Though we may not be able to unfold these facts ourselves; may not be able to take all the steps or understand all the processes of a scientific investigation or experiment, may we not hope to qualify ourselves to understand and turn to our own advantage the results of the investigations and experiments of the most thoroughly scientific?

GAY LITTLE DANDELION.

Gay little Dandelion
Lights up the meads,
Swings on her slender foot,
Telleth her beads,
Lists to the robin's note
Poured from above;
Wise little Dandelion
Asks not for love.

Pale little Dandelion
In her white shroud,
Heareth the angel breeze
Call from the cloud.
Tiny plumes flattering
Make no delay;
Little winged Dandelion
Soareth away.

For the New England Farmer.

APPLE-TREE BORERS.

It is not without some degree of reluctance that I take up my pen to give the readers of the FARMER what I believe to be some facts relating to the Apple Tree Borer—*Saperda bivittati*. The large number of communications which are yearly written to editors of agricultural papers on this subject is an evidence that it is one of importance, and the great variety of recommendations they contain convinces me that the habits of this pest of the orchard are as yet comparatively unknown. A large number of writers recommend plugging up the holes with various substances to kill the borer. The best writers in the country on fruit trees and on insects suggest, if they do not recommend the same remedy.

For nearly forty years I have not only been a close observer of the habits of the borer, but with the exception of the last few years, I have with my own hands been engaged in active warfare against his depredations. This experience teaches me that when the borer has made a hole in a tree that can be stopped up, his work of destruction has ceased.

Let me describe how he operates on my orchard. The eggs, from three to five in number, are deposited on the trunk or root of the tree about even with the surface of the soil. The miller in selecting a proper place to deposit her eggs, will, if possible, find an indentation caused by an old wound, if the wound is partially healed. The eggs will be deposited on the upper side in such manner as to protect them from any liquids which may run down the trunk of the tree. If a root is permitted to grow so far above the surface of the ground as to allow the miller to find her way to the under side, she is sure to deposit her eggs there, and thus secure a place of safety for her young.

The eggs are deposited during the summer months, most of them during July. As soon as the eggs are hatched the worms commence to eat their way *down*, making at first very small holes hardly visible to the unassisted eye. As they eat at first only the soft bark which lies near the wood of the tree, nothing is visible to the most experienced observer except very small black specks where they entered.

A careless observer examines his trees, and seeing nothing, passes on, believing them all right, while the work of destruction goes bravely on; while a careful observer, who understands their habits, will sometime in September remove a few inches of the soil, and with a good-sized, sharp-pointed knife slightly scrape the bark of the tree in such places as he suspects that eggs may have been deposited. On discovering the black specks where the worms have entered, with the point of his knife he removes the outside bark and follows the passage which each worm has made until he finds and kills them all.

In September they are usually found from two to five inches below the point they entered. There is not usually more than two or three eggs that hatch at one point, but if the tree be large there are frequently several clusters deposited on different sides of it.

If carefully removed the first season, the tree receives no perceptible injury; but if, as is usually the case, the borer is permitted to remain another year, he winters about five inches *below* where he entered. During the next spring and summer he eats his way back and forth between where the eggs were deposited and where he wintered. As he grows larger he eats not only the bark but also portions of the wood of the tree; and the last time he ascends he feeds entirely on the wood, leaving the bark projecting over the side of his passage way.

In September of the second year it is very uncertain where he can be found. Sometimes he is at the very lowest point he has ever reached, while at other times he has eaten his way back to about where the eggs were deposited; or he may be eating his way on the

sides between the two points named. On ascending he usually selects the same point where the egg was hatched, and bores a hole nearly directly under it. The only injury he does after this is to bore a single passage way in the wood of the tree from six to nine inches in length. At the top of this he changes to a miller, ready to leave his winter quarters when summer approaches.

Full grown Borer.

Perfect State.

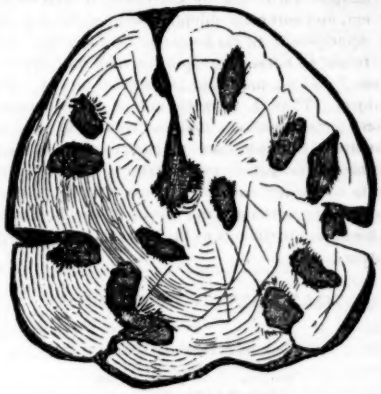
After trying a great number of experiments I have found the best and most convenient way to protect an orchard from the depredations of the borer, is to make a small mould of fine gravel or coarse sand around the trunk of each tree sometime in May. The object of this is to cover all roots and uneven places on the trunk of the tree near the ground, and to keep as dry as possible the places where the eggs must be deposited. In order to hatch, an egg seems to require some degree of moisture. I have never seen an egg hatch where dry sand came in direct contact with a smooth surface.

In September of each year the mounds should be removed, and the trees examined. An experienced hand will examine three hundred trees per day. When an orchard is once cleared of borers, it requires but very little labor to keep them out. If the business is understood, one examination each year during September or October is sufficient. I have found by bitter experience that neither lime nor ashes will keep the borers from the trees on my land, and I have long since come to the conclusion that nothing should lay in contact with the trunks of my trees except fresh earth.

E. HERSEY.

Hingham, Mass., May, 1869.

REMARKS. — We have usually found a mound of cuttings or excrements marking the entrance of the newly hatched worm, from half to three-fourths of an inch in height, and not much larger round than a common darning-needle. The recommendations for plugging up the holes of the borer, in which we have little faith, we have understood as intended to apply to their entrances into the wood, which is marked by larger and coarser cuttings, and not to the nice little round hole a few inches from the ground where they make their exit. We have often fished them out from their passage ways with a bit of barbed wire. We believe our correspondent is right in his statement that the borer first eats down and roundabout, and that he does most of his injury to the tree before he enters upon the excavation of his Hoosac tunnel, which terminates in the round hold from which he emerges. To stop up that would indeed be closing the stable after the steed was stolen.



Work of a Borer in the trunk of an Apple Tree.

Still they sometimes so weaken the trunk that the tree is broken down by the wind, or falls of its own weight. The extent to which their perforations are sometimes carried is illustrated by the above cut of a section of the trunk of a tree infested by borers. We have preserved several other similar specimens.

For the New England Farmer.

HYDRAULIC CEMENT.

My occupation being laying cement water pipe, I have been much interested by the inquiries and articles upon the subject that have lately appeared in the FARMER. Having made this business a study and specialty for several years, I submit a few remarks upon the subject.

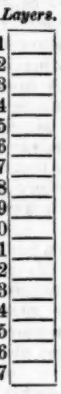
Hydraulic cement is made of a compound limestone, which usually contains the following impurities: carbonate of lime, carbonate of magnesia, silica, alumina, oxide of iron, and a small amount of alkali. To these impurities is due its property of hardening under water. As this stone will not slake like pure limestone it is reduced to a powder by grinding.

This stone is found in the valleys of the chain of mountains which traverse the eastern part of the State of New York, and also in other parts of the United States. The fact of its being first discovered in the town of Rosendale gave it the name of Rosendale Cement.

This sedimentary rock is divided into many layers. In Ulster County, N. Y., where most of the stone of which the cement for our

Eastern markets is quarried, it is about forty-six feet in thickness and is divided into seventeen layers, varying much in character and hydraulic properties. These layers themselves often vary much in short distances.

To make the subject more plain and show why casks of cement, often of the same lot, vary so much in quality we will draw a sketch of the layers as they usually occur in the quarry.



The layers No. 1 and 2 make a good cement, which sets in about fifteen minutes. No. 3 makes a cement which sets in half the time of 1 and 2, but it contains an excess of caustic lime which slakes and cracks it to pieces in about an hour. No. 4 makes a good cement. No. 5, like No. 3, makes a worthless cement. No. 6 usually makes poor cement. No. 7, in some localities, makes good and in others poor cement. No. 8 will not make good cement. The layers from No. 9 to 16, when mixed together, make good cement. No. 17 makes poor.

From this it will be seen that there is a liability of sometimes getting too great a proportion of the objectionable layers, and when this is the case, poor cement is the result.

During the last three years we have found much more poor cement than in former years; probably owing to the fact that there has been a greater quantity used since the war, and manufacturers having been pressed to supply the demand, have used less caution in selecting the stone.

Cement is said to be set when it has left the state of mortar and become sufficiently hard to break and crumble. The time required for different cements to set varies from a few minutes to eighteen or twenty hours. The time required for a cement to set is not proof of its good or poor quality. Cement which contains a ruinous quantity of carbonate of lime usually sets very quickly, and some quick-setting cements are good.

The best cement known—natural Portland—which is made in Portland, France, requires about eighteen hours to set. The artificial Portland cement—an excellent cement—sets in a few minutes. Our American cements answer all common purposes, and their price is only about one-fourth as much as those imported.

Age and moisture injure and destroy the hydraulic energy and power of cement. Cement in casks, kept one year as dry as it conveniently can be, makes work that is only about half as strong and hard as work made of new cement.

There is a great difference between *setting* and hardening. It requires a long period of time for cement to harden properly. For weeks after it has set, it remains so tender that it can be easily broken and crumbled with the hands, but in time it becomes nearly as hard as common limestone. Work made of good cement requires about a year to get strong and hard. If blocks made of it and put in a damp place to harden, will sustain at the expiration of a month 100 pound weight before breaking, will at the end of two months, sustain 200 pounds weight; at the end of three months 300, and keep increasing in strength for over a year.

As some water contains impurities that prevent or retard the hardening of the cement, it should be wet up with that which is pure.

Some of your correspondents object to the use of cement for tanks, &c., to hold the liquid of the stable, and think such liquids will destroy cement work. To which I will say that these liquids will injure new cement work and prevent its hardening; but if the tank were to remain six months or more, kept moist with pure water, stable liquids will not injure it. I have made some work for this purpose, and have not heard but that they prove well. I use no brick in such work.

But I find I am writing a long letter, a fault we are apt to be guilty of when writing on a favorite topic. My purpose was chiefly to call attention to one cause of frequent failures in the use of cement. The importance of a good article in the construction of dams, piers or bridges, &c., as well as in making drains, cisterns, &c., should lead mechanics to a more careful study of the subject, and to a closer inspection of every cask of the material used. Were this done I apprehend that less failures would occur in its use on the farm, and less dams and piers would give way to the force of our annual floods. B. LIVERMORE.

Hartland, Vt., May 4, 1869.

For the New England Farmer.

BREEDS AND MANAGEMENT OF POULTRY.

As you published my poultry account, perhaps those who were interested enough to read it will like to know something about the breed of fowls kept and their management. The fowls are the Asiatic breed, light colored, with pencilled necks and yellow legs, and weigh, hens from 5½ to 7½ lbs., cocks, from 8 to 10 lbs. at maturity. They were obtained by purchasing the *best* I could get in this vicinity and keeping the *best* of their produce.

The geese were purchased of a party who advertised in your paper (none the worse for that) as being pure Bremen, but they are mongrel and weigh about 12 to 15 lbs. each.

The turkeys are mostly bronze, the hens weigh from 13 to 15 lbs., gobbler at two years old, 25 lbs.

In regard to feeding, I keep corn and oats an Indian meal dough mixed with sour milk, when we have it, constantly by the stock poul-

try; but young chicks and turks are fed only what they will eat up clean, but are fed often. The goslings are allowed all the grain they can eat, in addition to a good pasture, until about three months old, when they are shut up to finish off on corn meal and beef scraps, which usually takes about three weeks.

I have a few words which I wish to say to those about to purchase poultry of fancy dealers. In the first place there are three classes of them; the first, and in my experience the largest, are dishonest men, who tell you that their poultry is "extra fine," "second to none in America" and that for the mere trifle of $10 he will send you a pair of the desired breed, *the cash to accompany the order*, and if the birds don't suit he will refund the money. Now that sounds pretty well until you come to try it on. The birds arrive, do not suit, the express charges are three dollars, the return express three dollars more, which would leave you six dollars out any way, and the ten dollars come back minus the charges for boxing and various imaginary expenses. Taking an account of stock after this transaction you will find yourself just about $10 out, if you order from 100 to 200 miles from home. The next class is composed of honest men who do not know what good poultry is. The third class are honest men who do know. The only fair way is to have the birds sent "C. O. D." —that is, bill payable on delivery, and in case the birds are not accepted the would be purchaser to pay one-half the express bill.

I have seen several accounts in the papers, lately in regard to setting turkey hens at any season of the year, whether broody or not. I kept several over winter for the purpose of hatching out my surplus goose eggs, and although I followed the directions, *verbatim et literatim*, they would not sit; after trying several of them twice, I came to the conclusion that Josh Billings knew what he was about when he said "the best time to set a hen is when the hen is ready," and that the rule is equally applicable to hen turkeys. If any one has had better success, I should like to hear the particulars. If desirable, I will give my management of winter chicks in my next.

THEODORE G. LINCOLN.

Taunton, Mass., April 30, 1869.

ROTATION IN THE VEGETABLE GARDEN.

A writer in the English *Gardeners' Magazine* says that one of the great secrets in working old vegetable gardens is to prevent as much as possible plants of the Brassica tribe from following each other. He thinks that the continual digging in of the rotten remains of cabbages, cauliflowers, &c., has a tendency to cause the disease called club. Raspberries and strawberries which have stood, it may be years, on the same ground, offer, when broken, excellent opportunity for any of the cabbage tribe; in fact one not to be lost.

Another difficulty arises in getting proper plots for onions and carrots, as in the majority of old gardens, they are so liable to the grub. He has found that the more ground is manured for the two latter crops, the more liable they are to the grub.

Old asparagus beds are another excellent resource to fall back on, but there are generally so many candidates for ground of this kind, that the difficulty is to choose. His plan for many years has been to follow the brassica tribe with peas, giving no manure The peas he follows with celery. By sowing two rows of peas at a time he gains when the peas are sown on a celery bed. The celery being pricked out at a good distance, say six inches apart, is prepared to await the removal of the peas successively. He sows celery late and grows it quick, as that is the only way to have it crisp and tender.

He makes it a rule to break up a bed or beds of asparagus every year, and to plant an equal quantity. He plants the asparagus on the celery ground, and the beds he intends for asparagus he manures very deep, putting old half-rotten leaves at the bottom and planting the celery in the old manure at top. When the celery is removed the ground is in excellent order for the asparagus. The beds being six feet wide he plants two rows in a bed, 30 inches between the rows, and the plants a foot apart, leaving a shoulder of 18 inches on each side of the bed. This answers admirably. The old beds of asparagus which are broken up are then forced, and he has strong plants in rows a yard apart of three years' standing, which he takes up and forces in succession. He grows Cape and other autumn broccoli and cauliflower in another plot constituting a different rotation.

MR. LANG'S SALE.

A full report of the sale of horses by Col. Thomas S. Lang of North Vassalboro', Me., May 11, is given by a correspondent of the *Boston Journal*. The attendance of buyers was not as large as was expected, and the sale is represented as far from spirited, and the prices obtained as extremely low.

The *Maine Farmer* says:—

"The aggregate amount realized from the horses sold was $6320; and it may be added that the animals were sold at figures very far below their real value, and much less, in many instances, than could have been obtained at private sale. The neat stock announced in the catalogue to be sold were withdrawn. Among the prominent gentlemen in attendance at the sale was Mr. Winthrop W. Chenery, of the Belmont Stock Farm, Somerville, Mass.

"It is with much regret that we chronicle

the sale of these animals, and the breaking up of the breeding establishment, which under Mr. Lang's management has accomplished so much towards making for our State the high reputation it has achieved in the production of fine horses. His stud has for several years past attracted hither the most eminent breeders in our country, anxious to observe his judicious and careful system of breeding and general management, and we feel sure, if his health had allowed him to have fully carried out his plans in this direction, far more satisfactory results would have been reached. These efforts will always be held in grateful remembrance by every intelligent citizen of our State, and wherever he may go, or in whatever business engage, their and our best wishes for health and success will follow him."

Twenty-one horses were sold, all to purchasers within the State, at the following prices:—

Nellie, 3 years, G. R. Lancaster, Bangor, $225.
Will-o'the-wisp, 4 years, L. Clay, Esq., Gardiner, $220.
Starlight, 3 years, James Edgecomb, Brownfield, $150.
Moonlight, 3 years. James Edgecomb, Brownfield, $85.
May Queen, 5 years, R B. Shepard, Skowhegan, $520.
Lady Ellsworth, 5 years, Wm. H. Strickland, Bangor, $425.
Reliance, 5 years, [purchased by a party in Augusta] $480.
Cad and Kit, 4 and 5 years, [matched pair] Geo. Alden, Augusta, $475.
Namouna, 5 years, David Ames. Rockland, $600.
Mayflower, 4 years, Mr. Babb, Bangor, $385.
Bessie, 5 years, Wm. Richards. Gardiner, $460.
Annie, 6 years, L. Clay, Esq., Gardiner, $255.
Plymouth Rock, 4 years, Mr. Webb, Lewiston, $620.
Right Bower, 1 year, Mr. Monroe, Abbott, $240.
King Herod, 1 year, Jas. Edgecomb, Brownfield, $105.
Black Flag, 1 year, Samuel Guild, Augusta, $100.
Singed Cat, 1 year, Mr. Pillsbury, Unity, $30.
Gray mare [no name] 9 yrs., B. F. Hersom, Waterville, $180.
Lady Grant. 3 years, F. R. Webber, St. Albans, $175.
Nickawa, 2d, 2 years, J. F. Hunnewell, China $55.
Hortense. [thoroughbred] J. H. Gilbreth, Kendall's Mills, $425.

Teaching Young Calves to Drink.—I think I have discovered a new and much easier and better mode of teaching young calves to drink, than any of the old ways practiced by my father and neighbors in the olden time, and by most people to the present.

My practice is to take the calf from the cow at the end of twenty-four hours, and fasten it with about six feet of rope in a box stall; I then milk the cow, and standing off just far enough for the calf to reach me, I wet my finger with milk, put it in its mouth, and gently lower my hand until it is immersed in the milk in the pail—let it continue to have the finger until I have given it enough. This I call lesson No. 1. The second lesson is given in this wise: Dip the finger in the milk and place it in its mouth, and when you have brought its mouth in contact with the feed, gradually withdraw your finger and the thing is done. It may be necessary to repeat this at the third time. The secret is that you must stand just far enough so that the calf can just reach the pail of feed, as the rope will then be taut, and hence he cannot reach you or butt over and spill his milk or feed. I have practiced this for a number of years, and have had no trouble to teach calves to drink.—*S. V. Van Fleet, Northumberland Co., Pa., in Co. Gent.*

FLOWER BEDS.

To cultivate flowering plants to the best advantage, requires as much care in the selection and preparation of the soil as any other crop. No one would expect to grow a crop of cabbages in soil overrun by the roots of trees and shaded continuously by their dense foliage; yet how often do we observe flowering plants placed in such circumstances, producing a few meagre flowers the early part of the season, perhaps, and dwindling and dying as soon as a few dry sunny days occur. Most summer flowering plants blossom on the points of branches, and therefore to produce a continuance of flowers, there must be a continued healthy and vigorous growth. It is true there are are some flowers adapted to shade, like the fuchsias, daisies, &c., and these should be selected for such positions. Heliotropes and some of the geraniums do well where there is sun only a few hours a day.

Select an open exposure where the sun will have free access to the plants, dig the ground very deep, and dress heavily with thoroughly decomposed manure, so that the roots may have some supporting resort when the surface moisture falls.

A small circular or oval bed ten or twelve feet in diameter, properly prepared and planted with flowers from pots, will produce a continued mass of flowers even in the driest summers. In arranging the plants, there is much latitude for taste, and very striking combinations may be secured.

Rose beds are much more beautiful and satisfactory, when only a few well known, hardy, and continued blooming kinds are employed, than when planted indiscriminately, with robust and tall-growing sorts crowding those of more delicate growth. In larger yards, where several beds can be made, there will be a better opportunity for a display of this kind of cultivated taste.—*Germantown Telegraph.*

Do Cattle Lose their Cuds?—I think they do not, but I know of a number of persons who, as soon as an ox or a cow is taken sick from any cause, (and of course the animals do not chew their cud while sick) make them a cud; some using codfish skin and sweet elder bark and yeast, another preparing a wad of hay in some mysterious way, another giving a piece of salt pork. Of course none of these things will hurt the animal. The question is, where do they get the first cud? It is certainly not made by the hand of man, and put into the calf's mouth; on the contrary, the little

calf at three or four weeks old is seen chewing his cud.

In my opinion, when animals are taken sick, no matter what causes the sickness, they stop chewing their cud from the same reason that a person loses his appetite, but as soon as they are restored to health by letting nature have its course, or by assisting nature with some mild medicine, they get well, and their appetite returns and they will raise and chew their cud as before.—*Cor. Western Rural.*

AGRICULTURAL ITEMS.

—Big rocks or heaps of stumps look well when draped with grape-vines.

—R. W. Scott, of Kentucky, recently sold 100 long wooled sheep for $2000. They were to go to Utah.

—It is estimated that full one-third of the sheep in Weathersfield, Vt., that came to the barn last fall, have died during the winter.

—One of the reasons assigned for the fertility of soils under stone walls is, the gradual wasting away of the stone composing them, by the action of the elements.

—A man in Pennsylvania in preparing rhubarb stalks for market, threw the leaves to his pigs. The next morning five out of nine were dead, three appeared convalescent, and one looked doubtful. They exhibited every symptom of poison.

—The Indiana legislature has located the Agricultural College at or near Lafayette, Tippecanoe County. The legislature of Ohio after much debate and manœuvring during several past sessions, has just adjourned without agreeing upon a location for the proposed Agricultural College of that State.

—A correspondent of the *Prairie Farmer* says he has broken hens of the habit of eating eggs by keeping a setting hen upon the nest, and removing the eggs every night. His hens that got so bad that they would "go for" a nest in a flock as soon as they heard a cackle, were broken of the habit entirely by this means.

—When my bees were in box hives, says Mrs. Tupper, I never omitted looking on the bottom board of each one every morning, and destroying the worms. Every one left soon becomes a miller, capable of laying many eggs, that become worms very soon—every one destroyed puts an end to four possible generations in a single season. Destroy *every worm* in spring, and you can have no millers hatched in your hives that season.

—O. S. Murray, of Warren Co., Ohio, writes the *Countryman* that his experience and observation is against the use of any of the preparations for seed corn for planting—such as tar, sulphur, saltpetre, salt, or even warm or cold water. He wants corn kept on the cob as near as possible to the time of planting. Presupposing the selection of the best ears for seed—ears with grains covering both ends of the cob as perfectly as possible—he would plant all the grains from end to end of the ear.

—A correspondent of the *Rural New Yorker* believes that the English sparrow imported into New York city a few years since will prove a great pest to the farmer. In England, he says, from the time the wheat begins to fill in the ear till it is put into the barn or stack, every field must be guarded from early dawn till sundown, every day, by the bird-keeper with gun and rattle, or they would make awful havoc. At the time mentioned they assemble in the villages and cities very early in the morning, and go in flocks of thousands all over the adjacent country every day to do their destructive work.

—A correspondent of the *Rural World* who lives in a part of Missouri where little else than *woods* are seen, says: when we cut timber at any time of the year except July, August or September the process of seasoning is so very slow that the timber becomes infested with innumerable quantities of worms, and the smaller limbs will, in a few months, fall to the ground from natural decay. But, by cutting timber in July, August or September, the bodies of the trees season hard and are not troubled by the worms, whilst the smallest twigs remain sound at least three or four times as long as those of timber cut in the winter or spring.

—To make a rat and mouse proof house Mr. James M. Hartwell, of Colebrook, N. H., tells the New York Farmers' Club to take some mortar and bricks, and after the frame of the house is up and boarded and the partitions set, lay one or two thicknesses of brick between every stud, both on the lower and upper floors. Then lath and plaster to the floors, and put on a narrow mop or washboard, not so high as to have the upper edge come above the brick. As the rats and mice gnaw in, just over or under the washboards, bricks thus laid will make the house rat and mouse proof, at an expense of $5. Would it not also make the house damp?

—In reply to a question as to the comparative value of the ashes of different kinds of wood, J. A. Whitney of the New York Farmers' Club, said, of trees commonly used as fuel, none contain so much potash as the elm. Beech is rich in potassa, and so is walnut. Pine, on the other hand, contains so little that its ash is not worth saving. Oak has eight per cent. of potassa but a large amount of lime. Ashes vary in weight with the moisture they contain. If a bushel weighs twenty-five pounds, one buys in it from two to five pounds of carbonate of potassa, when the wood was hard. For agricultural uses oak wood ash is as good as any on account of the lime it contains; for potash, elm, beech, birch and maple should be chosen.

EXTRACTS AND REPLIES.

FROTH HOPPERS.

I have had it in reserve ever since last summer to write you concerning the new insect or bug that has done so much mischief in this and other portions of Vermont, during the past two or three years. It is believed by some that the quantity of hay grown on some fields was one-third less, to say nothing of the depreciation of quality, on account of the sapping of this insect. I have seen no notice of this new-comer either, in the columns of the FARMER or any other agricultural journal. The first appearance noticed is a little mass of white *froth* or *foam* near the bottom or centre of the grass stock. Imbedded in this foam will be found two small bugs (probably male and female), which for size and appearance have often been mistaken for young grass-hoppers.

The explanation of this phenomenon I believe to be this—the insect taps the stock and the juice is blown into these minute bubbles by the breath or exhalation from its body. I have watched them with some interest to determine if possible what *becomes* of them—whether they take "to themselves wings and fly away," or burrow in the ground, or what not. But the mystery is yet unsolved.

Although to *us* this proves to be "something new under the sun," an Entomologist who reads this may perhaps recognize an old and familiar acquaintance, and be able at once to assign them their proper name and place. E. K. BAXTER.

Sharon, Vt., 1869.

REMARKS.—There was something said in the papers last season in relation to this insect. If it is not the froth-hopper, or frog-hopper described in Harris' book on insects—and this has been denied by some—we do not know what it is. There are several species of this insect in New England. The annexed cut is of one of them. Like other in-

sects they are more abundant some seasons than others. It is said that after alighting upon the grass, they perforate the stem with their beaks and take in such quantities of it that it oozes out of their bodies in the form of little bubbles which soon completely covers them up. Will Dr. Hartwell of Wilkinsonville, Mass., or some one familiar with natural history, reply more fully to the inquiries of Mr. Baxter.

CULTIVATION OF TOBACCO.

Will the editors or the correspondents of the FARMER inform me of the best way of raising tobacco? D.

Chittendon, Vt., May 10, 1869.

REMARKS.—The editors respond by saying that in their opinion the best way of cultivating tobacco is not to cultivate it at all. To raise tobacco in New England three things are necessary, a warm location, rich land and lots of the best manure. Have you all these in Chittenden? The farmers in the Connecticut Valley in the States of Massachusetts and Connecticut, considerably south and on lower land than yours, find the season barely sufficient for the maturity of the plant. Perhaps few branches of farming require more practical experience than this. In the first place the plants must be started in a hot-house or highly manured seed bed. These require much care and labor in weeding, &c. The manure is generally spread and ploughed in two or three weeks previous to the last ploughing, which is usually done just before setting the plants. The land is then harrowed,—some preferring flat culture, others hill up. The hills are prepared with the hoe, and phosphate, fish-guano, &c., applied in the hill, before setting the plants. Then come the cut worms, and after you have fought them to the death, and even before you have conquered them, the large green tobacco worm is found boring holes into your "Havana wrappers." The weeds and the worms will keep you busy. All other work must give place to this. Whatever other crop is neglected, the tobacco patch never is by cultivators. Then, two or three weeks before cutting, the "topping" and "suckering" is attended to. There is said to be a certain leaf which indicates where the top should be severed, but it is also said that much practice is required for its successful operation. Then the curing is another particular and nice performance, which requires skill and proper apparatus and shelter. But then all this comes after the manure, of which the largest pile of the best quality must always be secured. The Connecticut River tobacco raisers buy western corn by the carload, and cattle and sheep in the fall and feed them high to make their tobacco manure. And this must be done every year, as no beast will eat the tobacco; and if they did, what would the manure be worth? These farmers bought Maine oxen last fall in only fair order at eight and a half cents per pound, live weight, and last week some of the same oxen were sold at the same price at Brighton, after having been transported back and forth, and having been fed on meal all winter. But, then, profit or no profit on feeding, the spring crop of manure must be had or the fall crop of tobacco will certainly be missing.

JERSEYS IN RHODE ISLAND.

I frequently notice among the correspondents of your valuable paper mention of importers and breeders of Alderney and Jersey breeds of cattle, in Massachusetts and other States, but have never seen any mention of this State. Now, Mr. Editor, there are gentlemen on this island who import and breed some of the finest Alderneys and Jerseys that I ever saw in this country. Among them are Robert Maitland, Esq., who formerly owned *Comet*, the king of Jerseys, as he is called by Mr. Crozier, which name he certainly deserves. Daniel Fearing, Esq., has some beautiful animals that he imported last year. Col. George E. Waring has quite a number of pure stock. George F. Wilbur has some twelve or more pure bred, and Philip Caswell, Esq., some. Now, Mr. Editor, I certainly think that these gentlemen are entitled to some notice for the time and money expended by them in improving our breed of cattle. And I sincerely hope that some one who can write an article for your valuable paper will encourage them in a continuance of their noble endeavors.

A CONSTANT FARMER READER.

Newport, R. I., May 11, 1869.

REMARKS.—We are always glad to publish facts in relation to improved stock and improved farm

management generally. We employ correspondents, ransack our exchanges, and do all in our power to collect these facts, and feel that breeders and farmers do not consult their own interest in relying on others to advertise the people of their operations. "The gods help those who help themselves," and if a man puts his light under a bushel or shuts it up in a stable, ought he to complain that his neighbors don't know that it is burning?

INQUIRY ABOUT DRAIN TILE.

In reply to an inquiry from a correspondent in West Gloucester, Mass., about the size, shape and cost of drain tile, we copy the following from "*French's Farm Drainage*," which is the best work on the subject yet published in this country.

"Drain tile, he says, are made of clay of almost any quality that will make bricks, moulded by a machine into tubes or into half-tube or horse-shoe forms, usually fourteen inches long before drying, and burnt in a furnace or kiln to be about as hard as what are called hard burnt bricks. They are usually moulded about half an inch in thickness, varying with the size and form of the tile. The sizes vary from one inch to six inches, and sometimes larger, in the diameter of the bore. The forms are also very various and this is one of the most essential matters, as effecting the efficiency, the cost and the durability of tile drainage."

The burnt tiles are about thirteen inches long. The two-inch sell at the factory for about $18 per thousand pieces, and larger sizes at an increased cost. It was recently stated that there are over fifty manufactories of drain tiles in New York, and there are several in New England. J. E. Edmond & Co., 394 Federal street, Boston, advertise both drain pipe and that glazed for sewerage and other purposes.

ONION SETS.

I should feel greater pleasure in replying to your correspondent, "E. R. C.," and another somebody without any name —— of Roxbury, Mass., if they had appended their names, yet I will answer their inquiries.

I generally grow several sorts of onions. When my black seed onions require thinning out in the bed the *second* time, I draw out those with the largest bulbs, about the size of horse beans, and lay them on the ground in rows to dry. They will enlarge considerably after being drawn. Let them lie till the tops are all quite dry and dead,—no matter if they have a shower of rain or two upon them, if turned over often to dry again. When quite dry I tie them up in small bunches by the tops, and hang them up where the sun can shine on them, taking care to stow them *out* of *frost's* way in winter. Soon as spring opens put them in rows about six inches apart each way, and we get early green onions, either to eat green as a salad or to use with "sage" for stuffing ducks to roast.

Potato onions I plant twelve inches apart each way, on not too rich soil, but that well pulverized. Rich soil makes the bulb grow to a larger size, but they rot and won't keep. Multiplyers and Shallots I plant on good soil. I find the Top or Tree onion to pay the best here, as they are a sure crop. I plant the large bulbs for raising the seed on good rich soil, and let the little bunches of small ones remain on the old stalk till it is quite dried and dead—then gather the tops, spread on a boarded floor to dry, and put away in open baskets or boxes with many holes or cracks to admit of plenty of air, till the next spring. Pull the bunches to pieces, and plant each little bulb *separately* about six inches apart in the rows; the rows being wide enough to admit of a hoe between them. These small onions bring good crops of large ones if kept clean from weeds and planted on good rich soil. I suppose the above is what your correspondents requires to know about onion sets.

JOHN WHATMORE.

Bridgnorth Farm, Dunleith, Ill., April, 27, 1869.

PEACHES IN VERMONT.

I have a small place and am a great lover of fruit, especially peaches; but our latitude is just beyond the peach limits. Could we not succeed by training flat so as to cover as we do grapes? I have procured a few pits from Michigan of early varieties to try with, thinking that natural will do better than grafted trees. I am located about two and one half miles from the east shore of Lake Champlain. Apples, pears, cherries and plums do very well; peaches were productive here when the country was new.

L. M. MACOMBER.

North Ferrisburg, Vt., 1869.

REMARKS.—For several years past peaches and peach trees have failed in most parts of New England where they once flourished. Many anticipate a return of former fruitfulness. More than twenty years ago we saw fine plates of peaches grown by the late S. Earl Howard and other gardeners in Burlington. The broad lake at that place, however, protects vegetation from early fall frosts, which we suppose it would not do at your distance from its shore. Branches of evergreens placed around peach or other tender trees serve to protect them in winter. The plan of growing them in pots or tubs which can be removed to the cellar in the winter has been considerably practiced, on a small scale.

SOFT SHELLED EGGS.

What is the cause of hens laying soft shelled eggs? Is it not abortion? I have frequently found them under their roost, but do not remember of ever finding them in a nest.

L. M. MACOMBER.

North Ferrisburg, Vt., 1869.

REMARKS.—This is no uncommon event in the poultry yard. The late Mr. Bement suggested that it might be caused by the hen hitting herself against the side of the building, or striking hard on the floor, in alighting from high roosts. Miss Biddy's ambition is never satisfied short of the top pole, and instead of coming down in the morning by degrees, as she went up the evening before, she takes a single leap, and often jars her basket severely in alighting; apparently forgetting how fat and clumsy she is.

KNEE-KNOCKING HORSES.

Can any of the readers of the FARMER tell how to shoe a knee-knocking horse so that he will go clear? Should the outside or the inside heel of the shoe be made the heavier? or should they be of the same weight, and the toe heavy or light? I believe a knee-knocker hits with the toe.

East Madison, Me., 1869. READER.

SHOEING DISEASED OR FAULTY HORSES.

As it is getting fashionable to crack down new things, it may be hardly safe for me to take two steps to the front from fear of being blown up, yet when the FARMER came here last week with inquiry about shoeing a knee-knocking horse so that he would go clear, I thought would I run the risk. I have had more than twenty years' experience in shoeing horses, including those with corns, quarter-cracks and bad limbs generally, in several of the Eastern and some of the Southern cities. I have also read the works of a number of authors upon horse-shoeing, and have conversed with a great many horsemen. And I would say to our friend "Reader" that horses must be shod according to their individual peculiarities, circumstances and condition—that scarcely any two should be treated alike. Hence no general rule can be laid down, nor any general directions given. But if "Reader" will give me a more definite description of his horse, whether of a nervous or sluggish temperament, whether light-limbed or clumsy, whether a foxy or logy traveller, I will give directions that will do no harm at least.

Please inform me where I can obtain a copy of an American edition of Youatt on the Horse, and at what price, and oblige a Haverhill, Mass. boy and A SHOEING SMITH.

East Rumford, Me., May 5, 1869.

REMARKS.—A. Williams & Co. advertise Youatt on the Horse, with notes and additions by Spooner and Randall, sent for $1.50, postage paid, on receipt of price.

RAISING COMMON POTATOES FROM SETS.

Though my experiment is not complete, I will give it as far as I have gone, in reply to an inquiry of "Subscriber" in a late number of the FARMER.

I made a cold frame about March 17th, into which I planted potatoes about two and a half inches apart and two inches deep, and let them remain until April 16. By that time they were up about one and a half inches high, and looked as well as any potatoes that I ever saw. Then I transplanted them into open ground. Some of the sprouts were planted with the seed on, others with the sprouts off, as an experiment. They have been set out about three weeks, and I think that a person could not tell which were planted with the seed on, and both both look very thrifty, and are almost ready to bloom. As to the yield I cannot say as yet, but will let you know when they are matured. They were planted on a southern slope on one of the Elizabeth Islands, in Buzzard's Bay. There has been no frost there since April 9. The potato is called the "Seven Weeks," from Prince Edward's Island. F. H. M.

New Bedford, Mass., May 8, 1869.

CASTING THE WITHERS.

To prevent the barbarous practice alluded to by Mr. Puffer, of Putney, Vt., I would say that by washing the protruding part with alum water it may generally be returned. It should be held in place until it begins to shrink, when the hand should be gently removed, and the cow rubbed on the back for a short time. I have never known this treatment to fail of effecting a cure.

Langdon, N. H., May 3, 1869. W. F. LOOMIS.

GROWING CELERY.

Seeing an article in the FARMER on growing celery, I beg to give my mode of growing it.

I put down two lines eighteen inches apart; and dig a trench about twenty inches deep, running north and south. Then put in a good layer of rotten barnyard manure, with a layer of fine soil; fork it over well; add more manure and more soil; mixed well together, till within about eight inches of the top. Trim off the top of plants with a sharp knife. Plant with a stick about ten or twelve inches apart. Cover over the trench with boards to keep off the sun till the plants have begun to grow and hold up their heads. In about nine days I hold up each plant with one hand gently, and with a little stick I scrape along on each side of the plants and put a very little soil to them; this I do about every other day till the plants are up above the trench. I go on in same way till it requires banking up with the spade. While in the trench I give the plants plenty of water. If treated in this manner a good long stick of white celery will be the result. JOHN WHATMORE.

Bridgnorth Farm, Dunleith, Ill., May 3, 1869.

CUTTING FEED.

In one of your Massachusetts papers, Mr. J. T. Ellsworth says, 'Cutting and mixing feed I have tried, but could not see that I gained enough to pay the extra labor." I have had a feed-cutter—"self-sharpening," Chicopee Falls, Mass., cost $17—for three years and think it has paid for itself every year, even on a small farm of seventy acres. My horse has had but little hay the past winter, having been fed mostly straw, and for three weeks nothing but straw, cut, with the same quantity of meal, corn and oats ground together, that I would have put upon cut hay, mixing the whole together with hot water, feeding when cool. The horse eats with relish and has gained in flesh throughout the winter. The cutting of corn-stalks and other coarse fodder for cows has also great advantages. They will eat it up clean, and keep in better condition on the same amount of food. The manure is finer, is more easily decomposed, and more easily worked. C. F. DEWEY.

Montpelier, Vt., April 26, 1869.

CUT TIMBER IN THE OLD OF THE MOON.

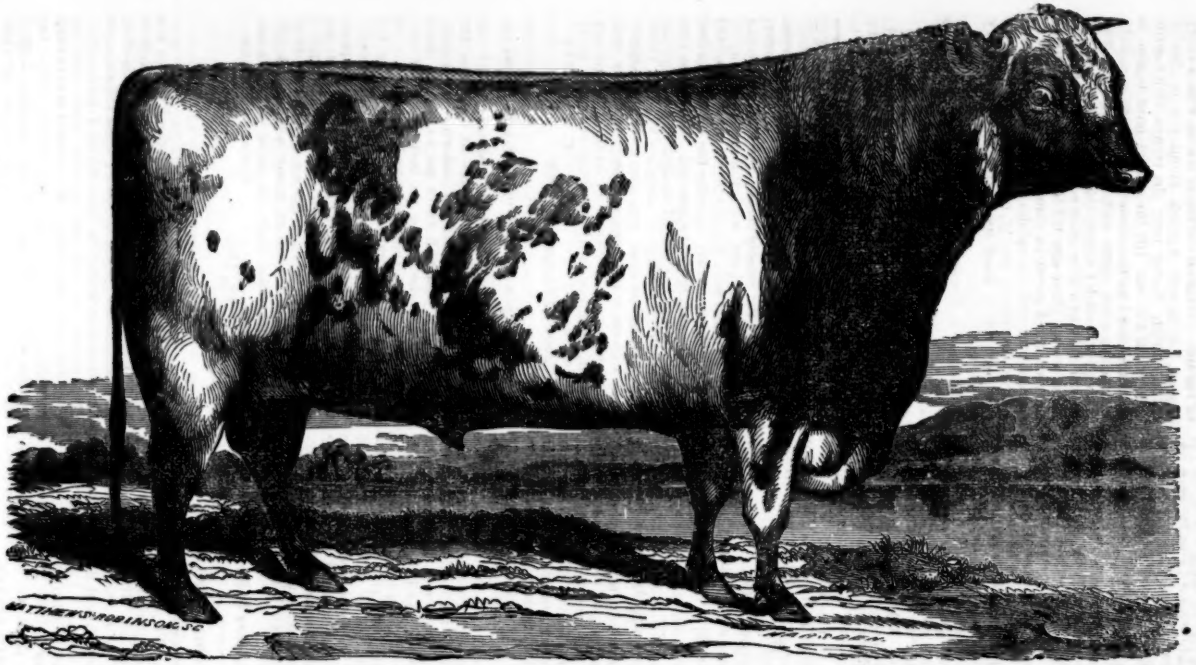
Though aware that it is customary with the learned editors of some papers to burlesque the idea of the moon having any influence on human affairs, I hope you will allow me to say to those who have been discussing the best season for cutting timber to last, that times and seasons are of little avail unless regard is had to the age of the moon. Timber cut in the last quarter of the moon will last twice as long as that cut in the first quarter. Sixteen cords of green wood cut in the last quarter is worth twenty cut in the first. This I have proved by experiments on various kinds of wood, continued through many years, and ask others to make like trials for their own satisfaction and benefit. HORACE FELCHER.

Bakersfield, Vt., 1869.

TO DESTROY DOCK.

I wish to give the readers of the FARMER my experience in destroying dock. In the spring of 1867, I tried the experiment on one-fourth of an acre, and in the spring of 1868, I tried the same on one and a quarter acres, from which I took about 2200 plants, and at haying time there were less than one dozen standing. My method is to cut the root about one or one and a half inches below the surface and carry them off from the field. I use a chisel or some implement about two inches wide, with a handle of sufficient length to enable the operator to stand erect while using it. I have no particular time for cutting. Any time will answer when they can be seen. ROYAL RINGE.

Wilbraham, Mass., April 25, 1869.



SHORT-HORN BULL "WINDSOR."

This bull, owned by A. J. Cass, Esq., of Holliston, Mass., is of a rich roan color, and has taken prizes wherever exhibited. His dam, "Windsor Lady," was one of the best milkers ever bred in New England. His pedigree, as recorded in Herd Book, vol. 7, is as follows:—"6301. Got by Monitor, 5019, (bred by Samuel Thorn,) out of Windsor Lady by 21 Hiawatha, 1660—Windsor Belle by Powhattan, 823—Red Romp by Agate 2—Romp by Enchanter (3729)—Rachel by Washington (1566)—Imported Pansy by Blaize 76—Primrose by Charles (127)—by Blythe Comet (85)—by Prince (521)—by Patriot (483.)

ESSAYS UPON FIELD HUSBANDRY.

We have before us a very interesting and quite an old book. The preface is dated at Killingworth, December 31, 1747. Probably Killingworth, Conn. The title runs thus:—

"Essays upon Field Husbandry in New England. As it is or *may be* Ordered. By JARED ELLIOT, A. M. Eccles. v. 9.

"Moreover, the profit of the earth, is for all; the King himself is served by the Field." Boston: Printed and sold by *Edes & Gill*, in Queen Street. 1760.

The preface opens by stating that there are sundry books written on Husbandry in England, but that the climate and method of management between them and us are so different, that these books are not very useful to us. So he thought that books of Husbandry calculated to conform more to the circumstances of our country might be of great service; not a history of our practice, not an account of what we do in our present Husbandry, *but* rather what we *might do*, to our advantage.

Mr. ELLIOT was a clergyman, and it appears that he had some doubts whether the suggestions he made would be favorably received by farmers, for he says—"It may be thought that a Subject of this Nature is not very suitable for one of my Calling. But, certainly," he adds, "the Cultivation of the Earth affords the most useful Philosophy, opens to us a glorious scene and discovery of the Wisdom and Power of the Creator and Governor of the World. It is what has employed Men of Rank and Orders, from the Prince to the Peasant."

Several expressions in the preface to the book, show that the same sort of prejudice existed against farming then, that we have now; that it "was not a genteel or profitable employment." So he encourages the reader to hope that good may flow from his Essays, by showing that useful knowledge has frequently come from a quarter where it was not natural to expect it, by stating that a monk first discovered gun-powder, and that the useful art of printing was the invention of a soldier. He adds, that it is acknowledged by our best writers, that while other parts of learning, less useful, have been cultivated, agriculture has been strangely neglected. "Some suppose the Reason of this Neglect is, that the Subject is too low for Polite Writers. It was not so accounted by King Solomon. He did not think it below his Dignity as a King, nor inconsistent with his Character as a Preacher."

He continues, and we think with truth and force, —"I rather think Husbandry has been neglected as being too high; That is, Writers do not care to be at the trouble of Projecting, nor at the charge of Trials and Experiments upon what hath been Projected: It being a great deal easier to write a Book upon the known Arts and Sciences that shall be accepted and applauded, than to write upon Husbandry so as not to be despised: for some think we do not need it, and that we know all that can be known already."

This idea—that so many think they know enough already—has been one of the most stubborn things in the way of progress in agriculture. It is just so with the sinner. He who thinks he is good enough already, will make no effort toward reformation. It is our duty to live in better houses, to have smooth roads, safe bridges and labor-saving implements and machines to work with, as well as to be moral and just in all our dealings. Whatever tends to honest gain and a higher civilization, is a duty; an imperative one. The parable of the "talents" shows this. We are not only to subdue the earth and make it prolific, but also to make it beautiful; and this beauty will have a reflex influence and make our own lives beautiful. Mr. Elliot hoped that if any one thought him mistaken, they would try their hand upon a few acres themselves, or their heads in persuading people that there was still something left to be learned in agriculture.

No one will doubt that in Mr. Elliot's time—one hundred and forty-two years ago—there was great need of improvement in the modes of locomotion. Not only need of better roads, but of better appliances on them. Of quicker, cheaper and safer means of transferring persons and property from one point to another. No one doubted that; but hundreds seemed to believe that the houses in which they lived were good enough, and so were their crops and animals, and means of education. Happily, the darkness which obscured their minds has been dissipated by the efforts of an Elliot and his followers, so that the "talents" with which we have been entrusted are put to usury, and we are in the way of hearing the grateful words, that we have been faithful over a few things, and shall be made rulers over many.

We propose, hereafter, to notice some of the suggestions made by Mr. Elliot, and show the progress made by those who have succeeded him.

AYRSHIRE AND DURHAM COWS.

The *Vermont Journal and Watchman* says that four gentlemen in Milton, owners of thoroughbred Ayrshire cows, have challenged J. A. Shedd, Esq., of Burlington, a breeder of Durhams, to put four of each on a farm together through the month of June, and "at the end of the time, we will weigh the cows, and if the milk produced by your Durhams shall outweigh the milk produced by our Ayrshires, in proportion to the weight of the cows, we will pay the sum of five hundred dollars premium, provided that if the milk produced by our Ayrshires shall outweigh the milk produced by your Durhams, in proportion to the weight of the cows, you will pay us the sum of five hundred dollars premium."

In connection with the above we copy from the *Country Gentleman* the statement that the Inverness, Scotland, Farmers' Society lately discussed the relative importance of these two breeds, "in a national point of view," granting the Durhams to be best for fattening, and the Ayrshires as milk-

ers. In conclusion, the chairman summed up by stating "that the number of members who had spoken on each side was equal. Both were doubtless right, for milk and beef were alike necessary, and he would say that Short-horns should be kept for feeding, and Ayrshires for dairy purposes. He regarded the Short-horns as most important in a national view. Though they were not as good milkers as the Ayrshires, they would give a sufficient quantity of milk to support their calves and a little besides. Some of them, indeed, would only keep up their calves, and no more, while others were nearly as good as Ayrshires."

NEW PUBLICATIONS.

PARSONS ON THE ROSE. A Treatise on the Propagation, Culture, and History of the Rose. By Samuel B. Parsons. New and Revised Edition. Illustrated. New York: Orange Judd & Co., 1869. Boston: A. Williams & Co. 215 pages. Price $1.50.

This is a revision and enlargement of a work published over twenty years ago. The varieties are classified and described, with directions for cultivation, grafting, budding, &c; operations which are illustrated by excellent cuts. In addition to his home experience the author adds the information derived from a personal inspection of French and English nurseries. The history of the rose and of its uses in ancient and modern times is enlivened by many interesting anecdotes. As evidence of the increasing attention given to the rose, it is stated that in 1762 Linnæus was acquainted with only fourteen species, while in 1832 two hundred and five were enumerated, to which considerable additions have since been made by discoveries in the Himalaya Mountains and elsewhere.

For the New England Farmer.

FARM IMPROVEMENTS.—HOW AND WHAT.

I should like to know how "R. N.," of Randolph, Vt., got his farm in so high a state of cultivation, and what he could find to sell to the amount of $500 from a farm of fifty acres. A farmer here is doing well if he turns off $500 from a farm of one hundred acres, and some do not reach that amount from twice that number of acres. Old winter has come back in earnest. About four inches of snow fell last night. K. S. D.

Williamstown, Vt., May 3, 1869.

REMARKS.—The above inquiry was submitted by the Editors of the FARMER to "R. N." himself, who has kindly responded as follows:—

The inquiries of "K. S. D.," as to "how R. N.' got his farm in so high a state of cultivation, and what he could find to sell off from a farm of fifty acres to the amount of $500," open a wider field for discussion than I feel at liberty to engage in just now, however much I desire to.

In brief, then, I reply—by the practice of so much *common sense* as Providence blessed me with, (which, by the way, is not enough to brag of!) and selling the effects! just as every other man can and ought to do.

If farmers will persist in fettering their intellects, reason, common sense, as they do by practically ignoring the means of agricultural grace that I mentioned in the article alluded to, i. e., farmers' papers, discussions and fairs—they certainly ought not to wonder or complain if they don't find their farming "pay." As well might a man complain of being hungry after having purposely plugged up his ears so as to be unable to hear the dinner bell!

Farming is a *profession*, requiring not less study, investigation, thought and practice, in order to success, than other professions; instead of being as is apparently often supposed, an *instinct*, requiring only age, or a certain *time*, for perfect development.

As to the "high state of cultivation" of my twenty-three-acre farm, I do not claim or think it is *really* in that state; it is only *comparatively* so, *i. e.* in a better condition than it used to be, and perhaps than those adjoining it; for I do not believe it yet produces *one-half* what it ought to, or what it will within five years, if I don't "sell out and go West," as my health and mechanical business demand. What improvement I have made has been by studying and practicing the farmer's *profession* in regard to making, saving and applying plant food or manure—rotation of crops, and the time, manner and implements for the sowing, planting, cultivating, harvesting, feeding or marketing them—the kinds, breeds, and relative numbers of farm stock, and science of breeding them, and best manner of feeding, using or selling them, &c., &c.,—as best I could, with several other kinds of business to see to, feeble health, and six children to "train up in the way they should go."

To be a little more explicit. Every foot of my farm is excellent, arable land, a slate, loamy lime soil, with a little blue clay occasionally; easily worked, lying high above all large streams, and not often injuriously affected by rain, drought or frost; nearly level, descending slightly to the east, and free from stones, stumps or other obstructions to mowers, rakes or ploughs,—it being a standing *order* that every stone or snag that the plough hits, *must* be dug out and carted off. Every stone, big enough to throw at a skunk, is picked and drawn off from each new seeded field before rolling it.

The rotation is corn, pumpkins, potatoes and turnips, on green sward turned just before planting, with raw manure cultivated in, and a shovelful of decomposed manure in the hill one year; wheat, with fifteen to twenty-one bushels unleached ashes to the acre, one year; and clover and timothy four to eight years. Product per acre, last year, early cut, *extra* hay 3800 pounds; sound corn, 85 bushels; pumpkins, ten one-horse loads; potatoes, 300 bushels; turnips, 500 bushels.

The stock wintered the past season is two large, blooded, breeding mares; one fifteen hands high, stud colt; four Ayrshire cows; two large two-year-old heifers and five yearlings—fully equal to thirteen cows, besides poultry. Dried dirt, India wheat hulls, sawdust, leaves and refuse straw is plentifully used for bedding in stables where the excrements don't freeze in the coldest weather.

Our house being commodious and near the Normal School, we rent some rooms, not needed by our family of eight, to self-boarding scholars, to the amount of $150 to $225 a year.

Now as partially answering K. S. D.'s last query, I will mention that the hay, corn, pasturing of three acres and fall feed, oats, India wheat, English wheat, barley, apples, potatoes, turnips, corn fodder and straw, pumpkins, garden sauce, berries, &c., which we have raised the last season would have sold at market prices for ($1001.47) ten hundred and one dollars forty-seven cents, and the stock, butter, eggs, milk, and poultry sold, and $150 student's rent, amounts to ($950.00) nine hundred and fifty dollars,—leaving the stock worth more than it was a year ago.

I have found that *good stock, careful and rational feeding, comfortable* quarters, *pay* better than the *reverse!* Herd-book calves, *e. g.*, at three days old, readily sell for twenty-five to one hundred times more than "scrubs," or no breed. A four-year-old heifer has just dropped her third calf. Her two former calves brought me $161.00! One cow has made over ten pounds best butter per week, for three and a half months past; and my mares average me about $100, each, per year, by selling their colts at weaning time, besides working on the farm, road and tread-wheel, full enough to pay for their keeping, &c. *Good* butter, too, not only sells for a higher price, but is always in demand.

I have also *discovered* that whenever any man has anything to sell, it is a good plan to let it be *known!!* Raise extra good stock, and then take it to the Fairs, and show it;—so also of all farm produce—and there will be found no lack of customers.

Cut not less than two tons of extra good hay per acre, and cut it early, before timothy is in blossom, when it takes less *power* to cut it and it makes *better* hay. Keep it well aired with the "American Hay Tedder," (which will save the labor of eight or ten hands); rake it with "Warner's Revolving, Sulky Rake," and put it into the barn, in the best of order, the same day it is cut. Use only the *best* of all farm implements; raise the best of all farm products, and then sell them for the highest prices. Keep well posted as to *market prices*, not only at the East, but as the Western prices affect the Eastern, know also the Western. Have the best fan-mill and separator and prepare your best wheat, oats, &c., for *seed*, and sell it for 25 to 50 per cent. extra price.

As my sheet is full, I will only add that my buildings and yards occupy the twenty-third acre, so that the crops are from only twenty-two acres;—that half the labor of one man and a horse will easily do all the work, if well *bossed*,—(I have hired it all done two seasons for $70 each, the man finding team and tools) —and that if K. S. D. or any other man, wants more particulars, I shall be happy to receive a call from him, and will do him all the good I can, and get all from him possible!

R. NUTTING.

Randolph, Vt., May 17, 1869.

For the New England Farmer.

CURING GRASS, OR DRYING HAY.

The idea has become somewhat prevalent that grass after being cut can be dried so much in the sun as to injure its nutritive value. Some claim that drying darkens its color, breaks off the leaves and turns the stock to wood, and the better way would be to partially dry the grass, store it in the barn and put on salt and lime for a preservative. This may be true; still, it is usually safe to examine the reasons or causes of results, especially if such results are contrary to our ordinary observation. I believe that the quicker and more completely grass is dried the better, and that the sun has no damaging effect upon it.

In the summer of 1868, I took a handful of clover, which is the most difficult of all grasses to cure, and hung it in the sun during the day on a post by the side of the house, and at night removed it so that no dew could fall upon it. After several days its color in blossom and leaf was quite fresh and green, and on chewing leaf or stalk there was the same taste as in freshly plucked clover. The sun did not injure this sample.

Then if we consider the ingredients of grass, as given in an article in Hall's *Journal of Chemistry*,—gluten, sugar and starch—are any of these substances injured by drying? In making maple sugar in warm days in spring the sap and syrup speedily sour if exposed to the air, and the sugar is better if the evaporation of the water is effected quickly. In making vinegar from maple sap or cider, the process is accelerated by its exposure to the air in small quantities, as by filtering through a barrel of shavings. So in wilted grass, the diluted sugar is not only liable to sour, but does sour, when laying through a warm night saturated with dew.

If we take the constituents of grass as they exist, in a more concentrated form, in corn, wheat or barley, and pack them in a partially dried state, as hay is often packed, and allow them to ferment and steam as hay is allowed to do, the gluten, starch and sugar are speedily so changed as to spoil the grain for food. If the housekeeper uses meal from such damaged grain, she may prepare it for food, but those who partake of it will detect the

"mould," or whatever we may call the results of the fermentation. So hay that ferments in the mow till it gives off a sour odor, and afterwards becomes dry, reveals doubless a similar sour mustiness during the process of mastication. As heated and musty grain is not as healthy or nutritious as that kept dry and sweet, we conclude that the same is true of soured and heated hay.

If I could have my hay made and put into the barn in a perfectly satisfactory manner, I should desire a good hay day, in which the dew would dry off early in the morning, and before it was entirely gone, say half-past seven o'clock, I would start the mowing machine and cut an acre an hour till noon; then start the hay tedder so as to stir all the grass cut once before noon; then after dinner, if it seemed desirable, stir with the hay tedder again, but begin to rake with the horse rake before the grass is dry enough to break badly; bearing in mind that the stirring, raking and tumbling should be done *while* the hay is drying and not after it is so dry that the leaves and heads will break off and be lost. At about three or four o'clock, the hay that yields from one to two tons per acre of timothy, red top and clover will be dry in the hot sun and ready to cart, and a smart gang of hands will, if the barns are conveniently and centrally situated, put the hay under cover. That hay, if dry, will come out in the winter in good shape.

In a poor hay day, I would mow, shake and rake the same, getting all the moisture out possible, and if it was half dried and the weather seemed likely to be unfavorable, I would get it in, preferring to risk the damage in the mow rather than the effects of wetting.

The effect of a shower is very bad; much of the nutriment in grass being very soluble, as is shown by the manner stockmen raise calves occasionally. Put a handful of hay into a pail and pour boiling water upon it; the water soon turns of a dark color and is quite a nourishing drink for calves, and takes the place of milk. Thus a shower of rain in a warm day upon hay must wash out much of the soluble matter, and the soluble part is nutritious. The dew does not wash the hay, but dilutes the sugar so that it is likely to turn to vinegar. Dew, however, does not injure hay until it is wilted. When it wilts it is dead. and unless dried, decomposition commences. If it is necessary to leave in the field partially dried hay free from water, it keeps better in cocks covered with hay caps.

The Fragrance of Hay.

Some contend that the fragrance or aroma of hay is a valuable quality, and that as thorough drying in the sun is supposed to destroy the aroma, therefore it is a damage.

Whether there is any valuable nutritious quality in the aroma can only be proved by such delicate chemical tests as can analyze a vapor. But, when we consider how little fragrance has to do with human food we cannot suppose cattle more discriminating than man is. There are odors offensive to man and beast. Such odors accompany the decomposition and putrefaction of animal and vegetable matter and show that they are not fit for food. The most nutritious food is almost without odor, as flaxseed, all grains, whether whole or pulverized, starch, sugar, salt, &c., and the odors of food are often added by fragrant herbs and spices, which often render food unhealthy and repulsive to those not accustomed to them. It is evident that we naturally desire food without odor, and that it satisfies our appetites, day after day, without causing us feelings of aversion. It is so with the cattle. No odor is so offensive to them as that accompanying the decomposition of hay not sufficiently dried in the making.

Mr. J. B. Fassett, of this town, once cut a lot of grass by the job. One afternoon a quantity was only well wilted when it was time to cock it, either to remain in the field or to be put in the barn. The owner said "get it in." It settled very much in the mow, and some of it was sold to the owner of one cow, that soon became sick, and only recovered when fed again on good hay.

In regard to the efficacy of salt and lime as preservatives of starch, gluten, sugar and woody fibre, there are erroneous ideas. These are all simple substances that keep forever if dry.

Tons of potato starch are made in northern Vermont, and in its manufacture the desire is to dry it as quickly and thoroughly as possible, and no salt or lime is used to preserve it. Tons of sugar are made, and that which is perfectly dry and stirred off so that it can be carried in barrels or bags is the most valuable. But whether dry or damp, neither salt nor lime are used to preserve it. The concentration that results from a perfect evaporation of water is all that is necessary, and that evaporation should be rapid.

In regard to woody fibre, I am told by mechanics that wood is best when sawed into boards and dried quickly, and never re-wet; a statement that was recently corroborated by Mr. W. Bacon in a communication in the FARMER on preserving timber. A pile of wet boards, closely packed, will mould and spoil in a few weeks in summer. Therefore it is safe to say that grass, which embraces all these substances, should be thoroughly dried. And as an evidence of the incorrectness of the saying that the goodness of grass can be all dried out of it, I may refer also to other articles of merchandise that are preserved by drying and still retain their strength, such as hops, tea, medicinal herbs, pepper and all kinds of spices.

The sun has no power to destroy vegetable matter, but is still a safe and reliable assistant

to the hay-maker, and we venture to repeat the old proverb—"Make hay while the sun shines." Z. E. J.

Irasburg, Vt., 1869.

For the New England Farmer.

EMPLOYERS AND EMPLOYEES.

Among the many important subjects to be discussed and understood, there is none of more importance than the relation between employers and employees. This is a relation that must exist in all kinds of business as now carried on; there must be, of necessity, employers and the employed; and the two must be brought together in mutual and reciprocal relations; and there must be action and reaction that will be profitable or unprofitable, advantageous or the reverse, just as these mutual and reciprocal relations are pleasant or unpleasant.

And in the first place, in order that the relation may be profitable and beneficial to each, there must be a mutual interest between the employer and the employees. If the employer manifests no interest in the welfare and good of his employees, other than he would in his horse, cow, or ox, only to keep and use for what they will pay in return, then at once the man is placed on the level with the domestic animals; his manhood is ignored, and he passes for so much bone and muscle; and the only question asked by the employer is "What is the largest amount of profit I can realize from the use of those that I employ?" And sometimes this is too manifest, not only by the employer, but by the whole family, in doors and out. Even the food set before the workmen is of the poorest kind, and often scant in quantity; anything, with such, is good enough for workmen, forgetting that those that labor must have the necessary *food* or *fuel* to keep up the steam. For unless the fire is kept burning, the power must run low; and every person thus shabbily treated feels it to the ends of his fingers, and it is not possible but that it should operate upon the amount of labor or service performed; there can be no good-will or heartiness in it; it must be only mechanical and listless, eking out the time.

Again, the kindness, gentleness and sympathy, which the employer manifests towards those in his service, will ever do much to win their confidence and affection. A kind word is never lost, and an occasional word of commendation acts like a cordial to stimulate and excite to the accomplishment of still more worthy deeds. And little acts of kindness, and a manifest interest in ones welfare and good, go directly to the heart, and kindle in return a deep and heartfelt interest in all the affairs and general welfare of the kind employer. These things will ever be reciprocal, and such kindness and sympathy are never lost, but reap a rich and ample reward; while, on the other hand, coldness, indifference, frowns, harsh words, fretfulness and impatience, manifested towards those employed will ever be sure to recoil with increased power upon the employer; for these send a chill into the soul; they dry up all sources and springs of affection and sympathy, and soon destroy all confidence and respect. No man can long respect and love, whatever the relations sustained, one from whom he receives no word of kindness, no manifestations of interest or sympathy, but sees only frowns and hears only words of reproach or impatience. Mind will act upon mind, heart upon *heart;* they will be drawn together, or they will be repelled, just as there is a marked sympathy, or the opposite. It is upon this principle that the old adage will ever prove true that "molasses will catch more flies than vinegar." Many are blind, very blind to their own interest and good, in the way and manner they approach and deal with those in their service.

Again, there is often manifested by some employers a certain kind of superciliousn ss or superiority, as though the mere relation of employer and employee advanced the one and depressed the other; wh le it may be far the reverse. A man may find it for his interest to engage in his service one that is far his superior in talent, in social standing, or in power and general influence. But engaging in the service of another, does not in the least change or affect that superiority. A man by engaging in the service of another does not sell himself nor his talents, his social standing nor his power or influence; he only engages to employ his talents and labor, intellectual or physical, for the good of his employer for a certain sum and certain time; and the employer has no right on account of this to affect or assume any superiority. He has only the right to ask and expect the service he engaged, and to treat with kindness and respect his employee.

Again, it often occurs that a person is employed for some special service, for which that person is expected to have a special preparation; in such cases that person may be expected to know more than his employer, and it may be greatly for the interest of the employer to consult with his employee and listen to his advice and counsel. And not only in such special service, but if those employed are intelligent and observing and feel an interest in their business they often have ideas, thoughts and suggestions, which may be of great benefit to their employers if they will only receive them. And the listening to and receiving such thoughts and suggestions exert a good and happy influence upon those suggesting them; it makes them feel that their employers have confidence in and respect for them. And here is another true maxim or adage: "If we wish to be trusted we must trust; and if we wish others to confide in us

we must confide in them." A jealous, suspicious person, always suspecting every one, and trusting none, will make everybody jealous and suspicious of him. We make others toward us what we ourselves are toward them.

Again, it is for the interest of every employer to engage in his service the best he can find and then pay them a good price, so that the employee shall have no just or reasonable ground of complaint that his pay is not sufficient to meet his actual necessary wants for support; because if a man is pressed down to the very lowest point of support, and must strain himself to the utmost to pay necessary bills, there is set before him at once the strongest possible temptation to be dishonest with his employers.

Every man has a right to ask and to receive a fair and liberal compensation for his services according to the relative and comparative value of the service rendered; and it is not for the interest of the employer to try tc sponge out of any body labor for less than a fair price.

Hundreds of boys and clerks, and sewing-girls and others, depending upon their meagre salaries and pay for a living, in our cities and larger towns, are rendered dishonest and vicious by the wicked, grasping, starving policy of those who employ them. Boys and girls, men and women, must eat and drink, must have clothes to wear, and some place called home to have shelter, rest and sleep; and means must be provided somehow to furnish these; every employer has an interest in the welfare of those he employs and should see that they are not actually suffering or driven to extremities. If persons are honest, temperate and virtuous, they have a just and reasonable claim upon their employers for such pay, if there is no physical disability, as will afford the necessities of life.

Again, when one engages in the service of another, he does not thereby sacrifice his independence or any rights or privileges, civil or political. His employer has no right to dictate for whom he shall cast his vote or to interfere in any way with his rights as a citizen. The employee has all the rights and privileges as a citizen of his employers.

We are confident that very many complain of their employees when their own treatment, and manner, and indifference, have made them to be what they are. It is too true that there are both bad employers and bad employees; yet generally, good and kind employers make good employees. E. G.

Needham, Mass., 1869.

—The Vermont *Journal and Watchman* says that Cassius Buck, of Fairfax, had a cow that did not seem to do well; he gave her medicine and she "heaved" up, not *Jonah*, but a lizard which measured 14 inches in length, and about 1½ inches thick.

DISSOLVING BONES.—FERTILIZERS.

The frequent inquiries that are made by farmers upon these subjects indicate an interest in the matter which will make the following articles from Dr. Nichols' *Journal of Chemistry* acceptable to a large part of our readers. The *Boston Journal of Chemistry* is a monthly publication at fifty cents a year.

Erroneous Views.

In some remarks made by Col. Daniel Needham, in the Massachusetts Senate, upon the bill relating to the sale of commercial fertilizers, which was presented as something new and valuable, he is reported as making the following statements:—

"He said that a most valuable fertilizer could be made by taking four barrels of ground bone, one carboy of sulphuric acid, and two barrels of ashes. He said that the expense of this fertilizer would be only about eighteen dollars a ton, and that he did not doubt the fertilizer thus made would be as valuable as any purchased in the market for forty dollars per ton. He stated the expense substantially as follows:—

4 barrels bone, at $2.50 per barrel,	$10.00
175 pounds sulphuric acid,	5.25
2 barrels ashes,	2.50
	$17.75

"The process of mixing, he said, was very simple. He would take the ground bone, and, after wetting it thoroughly, allow it to heat, which it would do in a short time; then pour on the sulphuric acid, and afterwards mix with the mass two barrels of ashes."

Quite a number of correspondents have inclosed to us slips cut from newspapers containing the formula, with requests for an expression of opinion in the *Journal* respecting its value. As regards this matter it may be said in brief, that we have a very high opinion of the substances employed, but a very poor opinion of the chemistry involved in making up the mixture. It is proposed to do first simply what we have so often recommended farmers to do,—make their own superphosphate, by acting upon ground bones with sulphuric acid. But that also is proposed, which we have never recommended,—viz., add ashes to the mixture, and thus greatly retard or injure the fertilizing influence of both the superphosphate and the ashes.

Ashes contain much caustic potash and soda, and these would be instantly seized upon by the free phosphoric acid in the dissolved bone, and locked up in new combinations,—phosphate of potash and soda. Thus several agents, of high fertilizing value as they exist in the bone mixture and naturally in the ashes, would be placed in a form not so readily and perfectly assimilable by plants.

The mixture is quite unscientific and unnecessary, and farmers had better keep ashes out of their superphospate; for as chemists say, it is incompatible. Adding ashes to fine bone, moistened with water, as we have re-

commended, gives quite different results. The caustic alkalies act upon the gelatine or the animal portion of the bone, and become in part saponified; and by abstracting or appropriating this portion of the bony structure, the atoms of phosphate of lime are liberated and made ready for plant food. The soapy, alkaline portion goes to form a healthy, robust stalk; the phosphoric acid and lime gives full, plump seeds.

It may be further remarked, regarding the fertilizer spoken of above, that the prices affixed to the substances are as far from being correct as the formula. The cost of the mixture would be nearly double the price stated.

Dissolving Bones.

We suppose as acceptable and useful service can be done our agricultural readers in pointing out the errors into which they are liable to fall, and warning them against the expensive and profitless experiments they may be led to undertake, as in stating new facts, or calling attention to new and important discoveries. They are constantly liable to be misled by the statements made at farmers' club meetings and through the journals professedly devoted to their interests. We have recently read, in one of the most widely circulated of our agricultural papers, an editorial article upon dissolving bones in sulphuric acid, in which farmers are advised to collect large quantities of bones, reduce them to fragments by pounding, and then dissolve them by pouring on the acid. Also the same wise advice was given by several speakers, at a recent meeting of the New York Farmers' Club. Now, this is all wrong. Farmers should not be advised to treat bones in this way, as it will certainly end in disappointment and pecuniary loss. Raw bones pounded into fragments cannot be fully and expeditiously dissolved in acid; and whoever recommends the process has never tried the experiment, or if he has, he purposely misleads. Fragments of bones no larger than a hazel-nut may remain in strong or dilute acid for months, and may not be perceptibly acted upon. A bit of bone, when brought in contact with sulphuric acid or oil of vitriol, is immediately attacked by it upon the *surface*, and the action goes on but a little while before a film or coating of *insoluble* gypsum or sulphate of lime forms upon the surface, and this *prevents farther action*. In order to dissolve bony structures and fit them for plant food, *they must first be ground to fine powder and the finer the better*, as the acid can then cut through the little atoms, and disintegrate them entirely. Coarse pounded bones should never be placed in contact with acid with the idea of dissolving them; they will not dissolve. Strong potash lye will dissolve whole bones, and therefore they may be packed in ashes under certain conditions, with good results. If a farmer has a quantity of bones on his premises which cannot conveniently be ground, it is better to burn them to whiteness, and in this condition they can be ground in a common stone mill; and the powder when acted upon by acid forms most excellent true superphosphate of lime, useful for almost all kinds of crops.

AGRICULTURAL ITEMS.

—A man in Syracuse, N. Y., has noticed that common currants standing close to black currant bushes were not meddled with by the worms which destroyed them in other parts of his garden.

—Messrs. Isaac Hicks & Son, Old Westbury, L. I., raised last year, nine rows of as many different varieties of potatoes, side by side, with the following result:—Early Goodrich, 188 bushels per acre; Early Samaritan, 96; Early Rose, 235; Harrison, 265; Calico, 267; Gleason, 254; Vanderveer, 227; Gardner, 215; Peach Blow, 196.

—A correspondent of the *Rural New Yorker*, after alluding to the difficulty of administering medicine to horses in the usual way, says he now holds up the horse's head and puts the neck of the bottle into one of his nostrils as far as he can, and the liquid will run down the horse's throat, without swallowing or effort, and without wasting a drop.

—It appears from the monthly statement of the Treasury Department that of the 65,972 immigrants who arrived in this country during the quarter ending September 30, 1868, 4615 were farmers, 11,769 laborers, 4686 mechanics, 2940 merchants, 1036 miners, 365 professional callings, 1612 servants, other occupations 940, without occupation 38,009.

—By the Monthly Report of the Treasury Department it appears that for the nine months ending September 30, 1868, the imports of raw and fleece wool amounted to 19,354,356 pounds; and for the same period in 1867 it was 27,030,029; valued at $3,010,967 in 1868, and $4,480,123 in 1867. Making the cost of the wool thus imported during nine months of 1868, 15½c per pound.

—Mr. J. J. Parker of West Chester, Pa., who is engaged in the coal and brick business, has imported from France a Percheron stallion for the improvement of draft horses in that section. This horse is five years old, over seventeen hands high, weighs 1630 pounds, and is of a dapple gray. His size and weight do not prevent him from having in his motions all the lightness and grace of the Arabian horse, while his disposition is exceedingly kind and tractable.

—In a late article on the "Deterioration of the Farming Interest in New England," written for the *Country Gentleman* by Levi Bartlett, of Warner, N. H., it is said that "in most of the hill towns the rural population have largely decreased within the past twenty-five years; and during the same period many hundreds of what were once considered good and productive farms have been aban-

doned, the buildings removed and most of the lands thrown out to pasture, large portions of which will eventually be covered with a forest growth."

1776.

Farmer at the plough,
Wife milking cow,
Daughter spinning yarn,
Son thrashing in the barn—
All happy to a charm.

1869.

Farmer gone to see the show,
Daughter at the piano,
Madame gaily dressed in satin,
All the boys learning Latin,
With big mortgage on the farm.

—At a cattle fair or market held at Guelph, Can., recently superior beef cattle were sold at 4½ to 4¾c per pound live weight; milch cows $25 to $40 each; 36 cattle at $48 per head. At Mount Forest Fair, Can., oxen were sold at $70 to $90 per pair; steers $40 to $55; cows $16 to $25; heifers $10 to $14, each. A Hamilton correspondent of the *Canada Farmer* says the American demand was brisk lately for milch cows, but this has slacked off somewhat, and he is assured that cows that two months ago would have brought readily $35, will not now bring more than $28 or $30.

—Alfred Young, Trumbull County, writes to the *Ohio Farmer* that he has had some experience in feeding corn boiled on the cob to cows, which was very unsatisfactory for the reason that much of it was undigested and went into the manure heap where the rats burrowed and got a good living at the expense of the cows, and the crows would scratch over the droppings and pick out the corn in the field. Since he has adopted the plan of grinding corn and cooking the meal, the rats have left for parts unknown to him and his cows do much better on less feed.

—The editor of the *Germantown Telegraph* says: "There is no mode that we ever tried so effectual in transplanting tomato, cabbage, cantaloupe, or any other tender plants, from the hot-bed, or from one place to another, as to prepare a vessel filled with manure-water and rich soil, about the consistency of thin mush, with which the roots of the plants should be well-coated and set in a hole made with a sharp, round piece of wood or dibble. After being rather firmly planted, moisten again with manure-water. We have never failed in any transplanting when done in this way, and the trouble is very slight."

—During a discussion about gapes in chickens, by the New York Farmers' Club, Dr. W. E. Sanger said that he had been successful in applying a very little nitrate of silver, lunar caustic, to the inside of the throat. J. B. Lyman thought that many would be afraid to use so powerful a remedy, and recommended mixing pepper and sweet oil or melted butter and swabbing their throats with a small slender feather about five inches long, the plume stripped off on one side. J. E. Thompson preferred prevention to cure. As soon as the hen is off put her and her family on soft fresh earth, and give them cooked food, if meal is used; preferred wheat screenings.

—On reporting the discussion at the last meeting for the season of the Waltham, Mass., Farmers' Club, the *Sentinel* remarks, "the meetings of the season have been uniformly well attended, and have fully kept up the interest of past years. Full arrangements for places and subjects for the next season have been made, and in all respects the Club was never more prosperous. Several of our young farmers have joined the Club the past season, and by their presence and words have added to its interest. This is a good sign. Our young men too often look to the overflowing city, when the broad acres of their fathers would yield them a competence with less of labor and anxiety.

—The New York Farmers' Club in answer to an inquiry say "There are now five English steam ploughs running in this country—one in Kentucky, one in Texas, and three in Louisiana. They cost about $15,000, and give great satisfaction, as they do the work of twenty or thirty horses, with the labor of two or three attendants. In England there are 2000 of these ploughs, and in Egypt 400. They run a gang of from three to six ploughs, and pulverize as deep as fourteen inches. They can go much deeper if the farmer wishes. Two or three inventors are working out the Yankee steam plough. One proposes to build, for about $3000, an engine that will move back and forth on the line of a wire rope fastened at the headlands to a self-advancing anchor."

—A. C. Thomas, of Wisconsin, says in the *Western Rural*, that, "If you wish to plough a land ten rods wide, instead of striking out a land that width take one-half that width, pace off five rods from the end, and set in your plough and plough to within five rods of the other end and stop; now back furrow as usual the required width and then turn a square corner at the end, observing to have the end furrow on a parallel line with the outside. By this means you will always turn round on the stubble, thus leaving the land untrodden, and instead of 'dead furrows' at the corners you will have 'ridges.'"

EXTRACTS AND REPLIES.

CABBAGE WORMS.

Will you please to give me, through your Extracts and Replies, a remedy for the cabbage worm? The cabbages were all destroyed through this section by a worm formed by an egg or nit of a white butterfly deposited in the head of the cabbage.

Alburgh, Vt., May 17, 1869. H. L. SOWLES.

REMARKS.—Perhaps there is no better evidence of the value of the cabbage than the fact that it is palatable to so great a number of insects and animals,—a number that appears to be steadily increasing. Every part of the plant, from the crown of its head to the sole of its foot, furnishes food to various forms of animated nature. And who of us

has ever cultivated even a garden patch of cabbage without feeling the need of a better knowledge of the nature and habits of the worms and lice and bugs which so often claim the lion's share of our harvest? Where can a better argument for agricultural colleges be found,—we put the question in all seriousness,—than in a cabbage head? Insects cause its roots to "club;" its stem is sawn off by the cut-worm, or destroyed by the "weevil;" its leaves are wilted by innumerable lice, and now, as our correspondent says, the progeny of a white butterfly destroys the head! And the question is for a remedy. Who can answer it? Mr. Henderson, in his "Gardening for Profit," a little book which we take much pleasure in recommending as giving the experience of a practical and successful gardener, says that on a strip of land near the ocean, which is filled with oyster shells, cabbages have been grown year after year for twenty years or more, and though manured with hog manure, and everything else, and though the soil be dry or wet, no club-root has ever yet been seen there; while on a different soil, not more than a mile distant, where ground is cultivated in the best possible manner, it is impossible to get a crop of cauliflower or cabbage clear from club-foot for two years in succession. He infers that the "Communipaw shore," as the oyster-shell land is called, contains so much lime as to make it fatal to insects. Hence he recommends the application of lime, particularly in the form of ground bone, which he applied after ploughing, at the rate of 2000 pounds per acre, and harrowed in. The experiment, he adds, was rather costly, but on the whole satisfactory.

A correspondent of the Concord, N. H., *Statesman* says that some ten years ago, while visiting the farm of the Insane Asylum of that State, he was much interested by a field of some three thousand cabbages, the largest and best he had ever seen, while on his own farm the crop had to be abandoned on account of club-foot. He was informed that the manure for cabbages at that institution received all the beef and pork brine and waste salt of the institution, amounting to many barrels each year; and since they had made use of the salted manure they had not failed to raise extra large crops, which for years had taken the lead of all others at the New Hampshire State and county fairs.

To avoid the cut-worm, plant on new ground, and a correspondent of the *Country Gentleman* says, open the hills as for potatoes; put in a shovelful of night soil and dry muck, or any good compost of manure, except hog manure, cover slightly and on this sow a dozen or more seeds, so as to have some plants for an occasional enemy, and gradually thin out to one or two plants in a hill. Hoe often night and morning when the dew is on, and sift on ashes and plaster to help keep away bugs, &c.

In this connection we print the following valuable communication, just received:—

THE CABBAGE WEEVIL.

When I sent my communication concerning the onion worm, I promised if it was worthy a place in the FARMER, I would give more of my experience. I often see the inquiry in the papers, What will destroy the cabbage weevil? Nothing will destroy it, without destroying the plant. It is the offspring of a fly, and is the onion maggot.

Butterflies or millers produce nearly all the insects that are such a pest to the farmer and gardener. I once placed a caterpillar with yellow middle and black ends, under a glass, and at the same time I placed one with red middle and black ends under another glass. The first produced five flies or millers which proved to be the veritable onion fly, the other one produced four flies or millers of about the same size of a yellowish brown color.

Suspecting that I had found the author of the cabbage weevil, I visited my garden early a few mornings and caught the creatures at their work. I immediately hoed my cabbage and put a handful of wood ashes around each plant. I was on the right track. In a short time my plants where the fly had been at work, began to wilt. I took a shovel and removed a shovelful of earth where the plants stood, carried it away, and replaced it with other earth, and set my plants and put ashes around them. I had conquered. Some may inquire what time I put on the ashes. About the third or fourth time I hoe, and again the next hoeing; no matter how many times, ashes are a good fertilizer. Try it gardeners. I have not been troubled since I found out the author of the weevil.

Chelsea, Vt., 1869. O. HOYT.

We are aware that all this does not answer Mr. Sowles' question, and we confess that we are not able to answer it. Who is?

A GOOD BARN.

I want to build me a barn which will contain forty tons of hay and accommodate twenty head of cattle and two horses.

Will you or some of your correspondents give me some plans for such a barn. I want one that will not cost more than $1500, and should rather build one for $1000 or $1200, if for that money I could build one that would answer my purpose.

You know, Mr. Editor, that a good convenient barn is a very useful appendage to a farm, and hoping I never shall have occasion to build but one, I want to consult a number of plans and try to suit myself the first time.

A YOUNG FARMER.

Alfred, Me., May 4, 1869.

REMARKS.—These fictitious signatures are very inconvenient, as well as improper. The rule of Editors not to take any notice of a communication without a responsible name, ought to be enforced in every case, and we have nearly made up our minds to throw every one of the kind directly into the waste basket. If requested to do so, we will withhold the name from publication; but it should always be given, if not as a signature, as a guarantee of good faith on the part of the writer. But farmers are so exceedingly modest! If "Young Farmer" had sent us his address we would have forwarded him one or two plans which we have published. That in the Weekly FARMER of February 6, Monthly, page 148, we consider a very good one. Our neighbor, Mr. J. Bent, of Concord, Mass., has one constructed on that plan. The

more we examine barns and the more we use them, the more favorable is our impression of the advantages of that design. It is adapted either to a cheap or an expensive structure.

ONION FLEA.—APPLICATION OF SUPERPHOSPHATE.

In my younger days I was a farmer, but for the last forty odd years I have resided in Boston and New York. Two years ago I returned to the Old Granite, my native State, and commenced farming, at which I feel rather a novice, but thus far have succeeded better than I anticipated. Last year raised from less than half an acre of land Dutch dandelion or chiccory, which brought me $186 in market. All my other crops were fair. This year I am using the superphosphate and would like to inquire of you or some of your numerous correspondents, what quantity should be put in the hill for corn and potatoes, and the process of mixing it with the earth, as I understand it will not do to drop the seed on the raw phosphate. Also, what will destroy the insect that takes the young onion as soon as it is up. We find it very difficult to raise onions here on account of the ravages of a small bug or flea. Is there anything that will destroy them? S. E.

Strafford, Blue Ridge, N. H., May 17, 1869.

REMARKS.—The questions in relation to the superphosphate were answered in the FARMER of May 1. In the FARMER of April 24, we published a preventive of the onion maggot, which has been very destructive of late in many sections. The application of hot water has also been recommended for the same purpose. But we suppose our correspondent refers to another insect, a little bug that is also very troublesome. Abundant seeding, a sprinkling of lime, ashes, plaster, &c., with frequent stirring of the soil, are among the preventives recommended.

DISEASE AMONG SHOTES.

I don't see why farmers or others writing for information through the columns of the FARMER, like "S. P. I.," of Washington County, Vt., should use initials or a fictitious signature unless they have some reason to be ashamed of their names. For one, I always feel a greater pleasure in replying to a correspondent with a name than to one without a name.

I had some pigs affected in exactly the same way as were "S. P. I." somebody's, but I don't know what to call the disease. My pigs were in my cattle fold where all out-door feeding was done, and all muck from stables was thrown, and in which the pigs rooted and wallowed at pleasure. They were fed with sour milk, whey, and buttermilk. They grew well,—not a nicer lot of pigs in the whole neighborhood. One day, one of them, while eating, tumbled over as if drunk, seemed to breathe with great difficulty, and died in about an hour and a half. Next day another died. It puzzled me to know what ailed them. Next morning after feeding them, and while looking and thinking what a nice lot of pigs they were, one of them squealed out as if it had been stabbed with some sharp instrument; threw up its head, turned over on its back and was dead in five minutes. I opened it but failed to discover the cause of its death The hide was of good color and free from blotches; gall and bladder all right; nothing in stomach or guts to indicate any stoppage or inflammation; heart good color and fat; lights somewhat inflamed. *Four* died one day. Thinking from the symptoms, the milk might be too heavy food for the stomach, I put it all into the swill tub together with the dishwashing, soap suds, chamber lye, a little bran, and small potatoes *boiled* and mashed. I fed all alike, big and little. The pigs soon got lean and scrubby looking, but I lost no more of them. They all lived, and with one exception, made good bacon pigs; but not so heavy as the same breed did the year before. After changing their food I was quite satisfied the milk was too heavy feed for them. For instance, put a young calf to suck on an old milch cow, and it is a great chance if the calf don't die. The old milk is too heavy for the calf to properly digest. JOHN WHATMORE.

Bridgnorth Farm, Dunleith, Ill., April 28, 1869.

FRAUD—SHEARED AND PULLED WOOL—FIELD MICE.

Is it a fraud, and actionable, to break up fleeces of pulled wool and put the same with the taggings and enclose in the sheared fleeces? There is a tradition that pulled and sheared wool will not work together.

The season is very much the same as last year at this time. There are still many fine snowdrifts, and Mt. Mansfield shows keen, sharp and white against the western sky. The field mice have engineered a good deal during the winter, but I don't believe they have done any damage. In exchange for a few grass bulbs they have harrowed up the surface and loosened matters and things generally. MARK SANBORN.

Orange Co., Vt., May 15, 1869.

REMARKS.—What is fraud? Worcester defines the word, "deceit, cheat, guile, deception, trick, artifice, subtlety, stratagem, imposition." If you agree, either expressly or tacitly, to sell sheared wool, we should regard it as a fraud to deliver anything else, and think that by so doing you subject yourself to an action for tort. If a man bargains for sheared wool you have no right to give him pulled wool, though it may be even more valuable to those who want it than that sheared. If one bargains for sweet apples, it is a fraud for the seller to deliver sour apples, though the latter may command a higher price in the market than the former. It is fraudulent, dishonest, treacherous, not to do as we agree.

REMEDY FOR HORN-AIL.

I have used the following remedy for horn-ail in cattle for years with good success, both with my own creatures and those of my neighbors. I have known it to fail in but *very* few cases, and in those the animals were almost dead before anything was done.

If you think it worthy a place in your columns, please give it publication for the benefit of farmers: One gill French brandy, a half ounce oil of spike, a half ounce origanum, (all can be obtained at any apothecary). Rub the hollow between the horns and give ginger tea. P. R. P.

Fitzwilliam, N. H., May 11, 1869.

EFFECT OF CUTTING GRASS CLOSE WITH SCYTHE OR MACHINE.

I have heard some farmers say that mowing machines cut the grass so close to the ground that our meadows are running out. Is there anything in the manner of cutting close with a machine more injurious to the land than cutting equally close with a scythe? Twenty-five years ago the grass on the farm on which I now live was thin and short, and unless the scythe was well crowded down the best

part of the hay was left on the ground, consequently I have always mowed as close as I could. At that time, about five tons were taken from ten acres; now twenty tons are cut on the same land. A part of this land has been ploughed and manured. The rest has neither been ploughed nor manured, except by foddering out some stacks of hay upon it, and by putting some plaster upon it. On a farm within sight of mine, one of my neighbors formerly raised large crops of grass. His men mowed quite high, leaving a very long stubble. The grass soon began to fail on that farm, and though they now try to cut closer, there is not much more than two-thirds as much hay secured as formerly. I should like to know what farmers have to say to these facts.

Snow fell here on the second of May to the depth of four inches, and on the third and fourth about as much more fell. FARMER.

Wallingford, Vt., May 16, 1869.

Ladies' Department.

DOMESTIC ECONOMY;

OR,

HOW TO MAKE HOME PLEASANT.

BY ANNE G. HALE.

[Entered according to Act of Congress, in the year 1866, by R. P. Eaton & Co., in the Clerk's Office of the District Court for the District of Massachusetts.]

CHAPTER XVI.

HOUSE CLEANING.

Into the most beautiful homes, and under the most vigilant eyes, dust and decay will intrude their unwelcome presence. So stealthy and insidious are their encroachments, that besides our efforts to keep them at bay by daily attention to order and cleanliness, every one knows there must be especial occasions for inspection and renovation of our dwellings, and everything belonging thereto.

In many minds fearful ideas of toil and disorder and discomfort are marshalled under the head of this duty of house cleaning; and, indeed, these occasions are too often carnivals of riot and confusion; yet they need not be laborious nor unpleasant. Energetic and systematic management at the head of the family, combined with good-natured perseverance and general neatness and thrifty calculation, will make them seasons of jollity and merriment, abounding in healthful excitement and improvement.

Such a passion have some persons for the excitement of house cleaning that they take the fever twice a year, passing through it regularly fall and spring; but where there is good attention and care in every-day matters of tidiness an annual attack is sufficient, and the spring, when everything in Nature renews its freshness and beauty, seems the most proper time for its occurrence. But do not begin the renovation too early; not until the cold storms of May are over, and June gives hints of summer arrangements; the garden having been made (because by the loosening of the earth much dust and soil find their way into the house) and the plants for indoor culture the next winter started on their new lives.

During some of the rainy days in May, it is well to bring from the cellar all the cabbages and the beheaded stumps that are standing in the trenches where they have been wintered, the turnips also, and the beets. Set them along the sunniest side of the garden, in mellow soil, and their young sprouts will furnish you with salads and greens for several weeks. Then bring up and set out the onions, for rareripes. Sprout the potatoes that are kept for the table and move them to the coldest and darkest place you have. Pick over your apples; if they are damp put them in clean, dry boxes or barrels. Wash with strong soapsuds every barrel or bin that has held vegetables or fruit. If wood or coal is kept in the cellar remove all chip-dirt and refuse of the coal, as well as all decayed vegetable matter, to the compost heap in the garden. Then take down the cobwebs and scrub off all mould from the walls and ceiling. Scour the shelves and closets with hot strong suds,—if there are traces of mildew, or stains of any kind, use plenty of sand with soft soap. Whether the walls of a cellar be of wood or stone, or its floor of cement, bricks, planks, stones, or the bare earth, every vestige of decay, and all litter, should be removed therefrom before warm weather, or the health of the inmates of the house will suffer from the noxious vapors rising thence.

A good cement for cellar floors can be made of a mixture of lime, coal ashes and water. Then there is the hydraulic cement, commonly used for this purpose when mixed with sand or gravel. It can be bought at a reasonable price of dealers in lime. The plastic slate, too, is said to make excellent flooring. A cemented floor is much easier to keep clean than any other sort, and a woman can apply the cement.

Cellars that are infested with insects should be provided with tables, on which to keep articles of food. These tables ought to be scoured frequently. Upon them green leaves of sage, or tansy, and sprigs of southernwood should be laid—replaced with fresh ones when dry. The legs of these tables should be set in pans of water, to be kept filled through the summer; this water and the leaves will be the destruction of red emmets, black ants, and, sometimes, larger vermin. Keeping wood in the cellar often brings insects there.

Your closets and tables being cleaned and set in order, every part of the cellar except the floor should be whitewashed. For this get a few pounds of unslaked lime,—large lumps of the newest you can buy.

Put the lime into a wooden pail or tub; pour on it warm water and stir it till it is a thick paste. Then throw in a small handful of salt and pour on slowly, stirring the while, *cold* water—rain water is best—till it is of the consistence of milk. (Some

persons add a cup of sugar to every gallon of whitewash, to make it adhere better.) Stir the wash frequently while using from it. Apply it with a whitewash brush—a small one with a short handle is the most convenient for a woman's use. A very little lampblack gives this wash a slate color; the same of red ochre, a rose color; indigo, a blue; yellow ochre, buff, or cream color. These coloring substances should be mixed with a little water, and then thoroughly stirred into the whitewash just before it is used. A colored wash gives a pretty appearance to basement rooms, and light cellars, as well as to pantries and store closets, while the lime of the mixture has a cleansing effect.

After the cellar has thus been cleaned let its, doors and windows be kept open the larger part of every fair day; if screens made of wire netting or strainer cloth are substituted for both windows and doors through the summer you will have the benefit of fresh air without fear of the intrusion of animals. About this time—before your garden is made—it is well to see that fences and out-buildings are in good repair, to clear out drains, and to look after the condition of water-butts and cisterns—so that you need not be troubled in your busiest time by the consequences of a neglect of such things. If fences and the outside of your buildings need painting you will probably have to employ a man for that purpose; but I know one lady, intelligent and highly cultivated, who painted herself the outside of her house, as high as she could reach, before calling for a man's help; and another who had the window blinds taken off, and then painted them at her leisure.

The wash mentioned for cellars, etc., is a very good substitute for paint upon fences by mixing with a gallon of it a quart of good flour paste. A very brilliant and nice wash is made of prepared chalk, Paris white, as painters call it, and glue. Get half a pound of frozen glue, (the white, light kind) pound it and mix with cold water, then pour on boiling water—about three quarts—and stir in the chalk—ten pounds to half a pound of glue; then add more water till the mixture is of the thickness of milk. Apply in the same manner as lime-wash.

If you need paint, get a small keg or pail of white lead mixed with oil, two or three quarts of boiled oil, and the same of spirits of turpentine. Mix a portion of the lead with a quart of the oil, enough to make it of the consistence of thick cream; then, for a glossy paint add only a pint of the turpentine; for a dead or lustreless white, a quart; if you wish it to dry quickly get a little of the patent drying mixture and stir altogether ten or fifteen minutes. A small quantity of lamp black, Venitian red, or yellow ochre, mixed with a little oil, and stirred into this white paint, as each is needed, will give different shades of slate, brown, red, yellow, clay, or stone color. To keep the lead or the mixed paint from hardening and drying, the vessels which hold either must be filled up with cold water, and covered closely, except when in use. Thus cared for they will remain fresh for months. It is good economy to own two or three paint brushes of different sizes. Keep them in water in warm weather—when there is occasion for their frequent use. Clean them with spirits of turpentine in the fall, and let them remain dry through the winter.

These matters having been attended to, look to your wardrobes, closets, drawers and chests. Dust them nicely, and if they need washing, use, as for all nice cleansing purposes,—not the numberless powders and soaps so loudly advertised and puffed for their labor-saving qualities, which are generally injurious both to the paint and the hands of the washer,—but a harmless and most excellent preparation of your own, made in the following way:—One bar of hard soap cut into small pieces and dissolved in four gallons of hot rain water, which is kept over the fire till the mixture is ready to boil. Then stir in a quarter of a pound of borax and one pound of common washing soda—finely pulverized. This makes a soft soap, of which two tablespoonfuls to a gallon of water gives a suds strong enough for all sorts of washing or scrubbing.

If any receptacles for clothing are not completely tight the cracks should be covered with strips of paper pasted over them; and if you have any fears of the moths, sprinkle benzine very plentifully within and about them, and among the woolens placed therein put cedar chips or shavings and tobacco stems. Furs should be thoroughly shaken, and hung in a draught of fresh air a day or two before being laid away; then placed in thick paper bags, with a little gum camphor; the bags pasted very tightly—not a crack or a crevice anywhere to admit air. No moths can then attack them from the outside, and if any should chance to remain after the shaking, the camphor will destroy them. But many sins are laid to the charge of the moths that are really perpetrated by our common house-flies and those little silvery fish-like insects that are called *shiners*. Spirits of turpentine, or benzine, sprinkled about the haunts of these latter insects will cause them to "skedaddle." When the flies abound, all furs and woolens should be kept well covered from them, and death-dealing potions, in the shape of saucers filled with a mixture of cobalt, sugar and water, or the "Lightning Fly Paper," placed in their way.

Before laying away winter clothing, and the blankets, spreads and heavier quilts, it is well to repair and wash all that require such treatment; and those that are beyond repair place with your materials for making carpets and upholstery work; the rags being cut out, both cotton and woolen assorted, and your savings of the same during the year,—together with old newspapers, worn-out or useless books, broken glass, bits of old iron, &c.—placed in readiness for disposal to purchasers of such things.

There is always in every house more or less rub-

bish—broken or defaced furniture, cracked crockery, handle-less jugs and pitchers, noseless coffee pots and teapots and teakettles, leaky pails and pans, machines or implements, or tools, that have become rickety or rusty, or have been crowded out of use by more attractive or better inventions, and old-fashioned and faded clothing,—all of which when first set aside seem too good to destroy, and which are waiting a convenient season, when, by some wonderful ingenuity, they are to be restored to usefulness. This they are kept for in some out-of-the-way place—usually the garret—and every spring need to be dusted and replaced and re-arranged. Sometimes at this spring cleaning a spasm of sense leads the good housewife to attack her collection with a daring hand, and presto! they are whisked into the tinman's cart or an old-furniture wagon and she has ample space for drying her herbs, and the children get a new play-room besides; while her pantry becomes resplendent with new pans, and her closets glitter and gleam with new glass and china, gorgeous to behold; and a pretty whatnot, or chair, or table gets the best place in the parlor.

The next thing to be done is to clear the chimneys. The grimy *sweeps* are seldom seen outside our largest cities, so we must either burn the chimneys out by rousing fires some rainy day, or hire a man to go to the roof of the house with a brick or a billet of heavy wood attached to a strong rope, which he will lower and raise through the flues till we have reason to suppose that the soot is all scraped down to the foot of each flue; whence it must be removed as it falls into the fireplace, or, if there is no fireplace, by displacing a brick. Marble mantels should be cleaned by rubbing them briskly with a woolen cloth wet with cold soft water—soap yellows them. When turned yellow they may sometimes be whitened by occasionally wetting them with weak lime-water.

The bedrooms and their furniture should then be examined; if you have the least suspicion that the joints or crevices of your bedsteads are inhabited, or that any blood-thirsty red-skins—not to give those intruders a worse name—have taken lodgings in the walls or about the floor. After a thorough washing and scrubbing with soap suds, give every spot that would be likely to harbor them, a plenty of drink for them, by applying thereto with a feather a solution of corrosive sublimate—one ounce in half a pint of New England rum, prepared by a druggist. If one application does not finish them, try another. If your room is badly infested it may take even more; but it is sure to clear them all out if you will persevere in its use during the month of June, then by keeping your bedding clean and allowing a plenty of fresh air through the apartment you will never again be troubled with them. If the room is carpeted the carpet should be removed before you begin this operation.

Taking up carpets, shaking them, and putting them down are the most laborious jobs of house cleaning—if you can impress a man or a large boy into your service, get them to do these for you. Your curtains are easily removed; should be washed, if of muslin or white cotton, and left soaking in clear rainwater, in the sunshine, while you get the room ready to put them up again. If you have a grass plat they will whiten better by spreading them there. Carpets are generally *beaten* too much. If you can spread them on the grass and sweep them well, first on one side and then on the other, a number of times, they will look better and will not be so worn as by beating. A small rattan cane, a cowskin whip, or a few birch or willow rods are the best implements for beating them with, and it is well to hang them on a line or bars for this purpose. Nice carpets should only be shaken lightly and then swept with a soft brush. Let them be left in the open air several hours.

While your curtains are bleaching and your carpet airing you will do your cleaning of the room. Don't attempt more than one room at a time and finish all the chambers before you begin with the lower story. Commence your work by sweeping the ceiling with a soft brush or a cloth tied over a broom. Then rub the wall paper, as high as you can reach with your hand, with a piece of old flannel—if there are any very bad spots upon it use a crust of white bread, rubbing with the inner side. Make a sort of mop, by tying the flannel to a pole, for cleaning the higher part of the wall. After this wash the windows, cleaning the sash with the soap suds before mentioned.

Never apply soap directly to paint. If it is badly smoked or soiled wet your brush or cloth—flannel is better than cotton—with hot suds, and take upon it a very little fine sand, with which rub lightly, and rinse with clean water immediately; then rub till dry with an unwet cloth. A meat peg, or a strip of whalebone, is of great use to clean corners and crevices and mouldings; cover it with your cloth; you will need this in cleaning the window sash.

All wood that is varnished should be lightly washed with cold weak suds, rinsed with cold water, and rubbed briskly with a dry flannel or an old silk handkerchief. Window panes are easily cleaned with the patent window polish now for sale at most paint shops; a very little of this mixture rubbed over them with a damp cloth, allowed to dry, and then removed with a dry cloth; leaves them beautifully clear and lustrous. If you haven't this, wash them with suds and wipe them with paper,—a few blank sheets procured at a newspaper office will be enough for all the windows of a large house. Some persons take out their windows in order to wash both sides of the panes. This is not necessary if you have a long handled window brush, or any means of showering or syringing them.

Of course all furniture that could not be re-

moved from the room you covered with shawls or sheets to keep out the dust, before the carpet was taken up,—the paper or straw beneath the carpet was well shaken and laid aside for use again, the floor was sprinkled with tea or coffee-grounds or wet grass, to prevent as much as possible the dust from rising, and then swept; so that now the furniture can be carefully dusted; the pictures, also, and then the glass that covers them carefully wiped with a moist cloth, upon which pour a few drops of camphor or cologne for cleaning oil paintings—and if you wish to keep the flies from their frames boil half a dozen onions in a pint of water, and wash them lightly with this when cold, using as a small mop, a bit of flannel tied to a stick.

In cleaning paint have a pail of hot strong suds made of the borax and soda soap, mentioned in the early part of this chapter, and also a pail of clean warm rainwater. Wash either with a soft scrubbing brush or a piece of flannel, a small portion—not more than a square yard—and then rinse well. If the paint is much discolored lay out a good deal of "*elbow grease*," but never put undiluted soap in contact with it; good suds and a careful use of a very little fine sand for the worst places is much better.

After the cleaning is over, if the ceiling needs whitening and you do not dare attempt it yourself, get some one to apply one or two coats of the lime or the chalk wash before spoken of. If your paint needs renewing you can go to work with the paint prepared as recommended when the repairing of fences, &c., was spoken of. The first coat of paint should be mixed almost entirely with oil, and allowed to become perfectly dry, then the next may be more or less glossy, as you desire. The less spirits of turpentine used the more liable the paint will be to turn yellowish, but the greater will be its gloss. In applying paint take but a very small quantity upon your brush, and rub it lightly into the wood by following the grain in short quick passes—finish it by longer and slower strokes, obliterating, as you proceed, all traces of the brush; never cross the grain of the wood in finishing. Wall washes should be applied in a similar manner. This is not hard work, and by attention to these particulars any woman can do as well with such matters as a man.

Perhaps, too, your rooms need new wall paper. After the paint is dry you can *hang* them, (paste them on) if you please, as a great many women do. If you choose a plain paper, or one having much blank surface, the old paper must be all taken off, the roughness of the wall smoothed with sand-paper, and broken places or indentations filled with a mixture of calcined plaster and lime-water made into a thick mortar—which will dry immediately. Then the wall may be wet with glue-wash,—quarter of a pound of glue pounded and dissolved in a quart of hot water. But if your paper is well covered (has a mixed, spreading pattern or many close, small figures) the inequalities beneath it will not show, so the old paper, having been nicely swept, can be left on.

Make a paste by pouring boiling hot water upon three quarts of dry flour with which quarter of a pound of pulverized alum has been mixed. Pour the water slowly, stirring it well as you pour. When the mixture is a little too thick to spread with a brush, stir in half a pint of spirits of turpentine, if you have insects about your walls, if not, the same quantity of water.

Let this paste get cold, then measure your walls and cut a length of paper. A striped paper is the easiest to hang, because it has no joints or matching of figures along the seam; these need a good deal of calculation about cutting and much attention in the hanging. If you have a figured paper, and no cornice, and no border for the top of the room, cut the lengths so that a figure commences at the top; with a cornice or border the pattern is more effective commencing a short distance below.

If you have a long ironing board, it is just the thing to lay your lengths of paper upon for pasting; but a table will answer,—which you will keep from getting defaced by covering with a clean sheet. Lay on this the length, and spread on its wrong side a thin coat of paste, with a small, soft paste brush,—which is similar in size and shape to your whitewash brush. See that every part is evenly covered with the paste; then fold the paper across the centre, and with a sharp knife trim the left hand side, by a rule or yard-stick, according to the colored lines or dashes that are placed as a guide for trimming along the side of the paper. Then, it being still folded, lift this length to the wall, (while raising it let the fold open) and touch the top edge to the wall, allowing the paper to drop straight by its own weight. Then with a dry brush, like that used for spreading the paste, sweep it gently down and across till all wrinkles are gone; it may need in some places loosening and dropping again before this is accomplished. When it is smooth, press it carefully with the brush wherever it seems loose, particularly along the seam. If the paper is very thick it is well to roll the seam after closing it; a wooden castor is very good for this purpose. A clean towel, or a soft cotton cloth, is better than a brush for smoothing and pressing a very thin paper. Paste upon the outside of any paper injures its appearance, so great care must be taken that none gets there. This will be prevented in a great measure by keeping the length folded—the paste within—as you take it to the wall; but it is sometimes squeezed out at the seam by the pressing and rolling, if there is much near the edge.

Now we come to the floors. These if carpeted need only a good washing with soapsuds. Unpainted floors that are not carpeted need frequent scouring with a stiff brush, using very little soap and a great deal of sand; that is, the common pine floors of kitchens, and similar rooms,— too much soap makes them yellow and dingy,—they need to

be well rinsed and wiped perfectly dry. Painted or varnished floors (if *both painted and varnished* you have the most durable covering you can get for a floor) and painted carpets wash with a soft cloth—woolen is best—in perfectly clean luke-warm suds; then rinse them with clean warm water or skim milk and rub them dry. Much cleaning of floors is saved by laying mats and rugs upon them; which should be taken frequently to the back yard and swept,—it spoils mats and rugs to beat them, or to shake them much.

Closets and cupboards are easily kept clean if papers are laid upon the shelves,—which can be occasionally removed and dusted, if soiled replaced with other; the blank papers procured at the newspaper office are very good for this. Fit them to the shelves, with about an inch hanging over the front, which may be cut in scallops and eyeletted by the children; your closets then will have a very nice appearance with but little trouble. The shelves of pantries, store closets and pot closets should be covered with brown paper; and small mats cut from old painted carpet save a good deal of work in the kitchen by being placed where hot kettles and pans are set when baking and other cooking is going on.

Youths' Department.

OLD SCHOOLMATES.

Whenever a new scholar came to our school, I used to confront him at recess with the following words:—"My name's Tom Bailey; what's your name?" If the name struck me favorably, I shook hands with the new pupil cordially; but, if it didn't, I would turn on my heel, for I was particular on this point. Such names as Higgins, Wiggins, and Spriggins were deadly affronts to my ear; while Langdon, Wallace, Blake, and the like, were passwords to my confidence and esteem.

Ah me! some of those dear fellows are rather elderly boys by this time,—lawyers, merchants, sea-captains, soldiers, authors, what not? Phil Adams (a special good name that Adams) is consul at Shanghai, where I picture him to myself with head closely shaved,—he never had too much hair,—and a long pigtail hanging down behind. He is married, I hear; and I hope that he and she that was Miss Wang Wang are very happy together, sitting cross-legged over their diminutive cups of tea in a sky-blue tower hung with bells. It is so I think of him; to me he is henceforth a jewelled mandarin, talking nothing but broken China. Whitcomb is a judge, sedate and wise, with spectacles balanced on the bridge of that remarkable nose which, in former days, was so plentifully sprinkled with freckles that the boys christened him Pepper Whitcomb. Just to think of little Pepper Whitcomb being a judge! What would he do to me now, I wonder, if I were to sing out "Pepper" in court? Fred Langdon is in California, in the native-wine business,—he used to make the best licorice-water *I* ever tasted! Binney Wallace sleeps in the Old South Burying Ground; and Jack Harris, too, is dead,—Harris, who commanded us boys, of old, in the famous snow-ball battles of Slater's Hill. Was it yesterday that I saw him at the head of his regiment on its way to join the Army of the Potomac? Not yesterday, but five years ago. It was at the battle of the Seven Pines. Gallant Jack Harris, that never drew rein until he had dashed into the rebel battery! So they found him—lying across the enemy's guns.

How we have parted and wandered, and married, and died! I wonder what has become of all the boys who went to the Temple Grammar School at Rivermouth when I was a youngster?

"All, all are gone, the old familiar faces!"

It is with no ungentle hand I summon them back, for a moment, from that past which has closed upon them and upon me. How pleasantly they live again in my memory! Happy, magical Past, in whose fairy atmosphere even Conway, mine ancient foe, stands forth transfigured, with a sort of dreamy glory encircling his bright red hair! —*From T. B. Aldrich's "Story of a Bad Boy" in "Our Young Folks."*

AFRICAN ANTS, OR TERMITES.

In Africa and in the Indies there are found in great numbers several varieties of large ants, some of which construct huge hills, or nests, ten, twelve, and, it is even said, twenty feet high. These are built by what is known as the Termites, a species resembling, and sometimes improperly called, the White Ant. The illustration at the head of our article shows the nest of a white ant, which Du Chaillu observed in the African forest. It is not so large as the nest of the termites, being about four and a half feet high.

The termites are divided into four different classes—the males, females, and the neuters—in which are included the *soldiers*, whose duty it is to defend the nest, and the *workers*, who perform all the labor, both in constructing the building and in maintaining the household. The workers of the termites are a fifth of an inch long; the soldiers are twice as long, each one having an enormous horned head, armed with sharp pincers. Each soldier weighs as much as fifteen workers. The males are still larger than the soldiers, weighing as much as thirty workers, and, unlike either the soldiers or workers, are provided with wings. The female, when engaged in laying its eggs, attains an immense size—its head being no bigger than that of the male, but the stomach swells to a huge proportion, becoming two thousand times as big as the rest of her body. She attains six inches in length, and weighs as much as thirty thousand workers. One cannot help wondering what the little ants—the fierce soldiers, and the busy workers—think of such a monster. It seems, according to the accounts, that they delight in her—the soldiers, at the least alarm, rush to defend her, and the workers all day long attend to her wants.

Her wants, indeed, are very numerous. She does nothing but lie motionless in her cell from morning to night and lay eggs, which she deposits at *the rate of sixty a minute, or more than eighty thousand a day.* Thousands of the workers busy themselves around their queen-mother, feeding her, carrying away the myriads of eggs that she lays, and placing them in minute cells, where they soon become juvenile ants. The queen-mother seems to be adored by all the rest. She appears, says a writer, to be their *beau ideal*, their poetry, their enthusiasm. If a portion of their city should be destroyed, you will see the workers setting to work at once to build an arch which may protect the venerated head of the mother.

So remarkable is the increase of the termites, that, if many other species did not combine to destroy them, they would fairly become masters of the world. They would destroy everything but the fish, and convert the earth into a vast ant-hill. But birds of all kinds are very greedy after them.

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AFRICAN ANTS, OR TERMITES.

Although larger than the white ant, they fall victims to that creature in immense numbers. The negroes in Southern Africa cannot get enough of them. They roast them like coffee, and thus prepared eat them by handfuls, declaring they are delicious. They also knead them up with flour, making a sort of plum-cake, which is highly appreciated by the natives. Even white travellers admit that they make very nice food, having the flavor of sugared cream. So, notwithstanding the immense numbers that come daily into the world, birds, insects, and negroes unite in consuming them to an extent that keeps them within reasonable bounds.

The hills and nests are not only of immense size, but have a solidity which will bear almost any trial. Not only can many men mount them without shaking them, but buffaloes establish themselves upon them as watch-towers, from which they can see, over the high grass which covers the plain, if the lion or panther is threatening them.

If the hill is attacked, the soldiers are to be seen rushing out furiously to its defence. They rush upon the aggressors, pierce them till they bring blood, and with their sharp pincers hang on to the wound, and allow themselves to be torn to pieces rather than let go their hold. The negroes, who are without clothes, are soon put to flight, and even Europeans get badly pierced and wounded. During the combat the soldiers strike from time to time on the ground with their pincers, and produce a little dry sound, to which the workers answer by a sort of whistling. The workers immediately make their appearance, and begin stopping up the holes in the hill, and repairing damages. If the attack continues, the workers mask the passages, stop up the galleries, and wall up the cell in which the queen-mother is concealed. If the cell is penetrated, and the mother-insect removed, the workers will continue their labors, for they are blind, and cannot immediately detect the loss of their queen.

These creatures sometimes enter houses, perforating unseen the beams, wood-work, and furniture—never destroying the surface, but forcing their way by galleries eaten away through the centre. They have been known in one single night to pierce the whole of a table-leg from top to bottom, to enter a trunk placed upon the table and devour its entire contents, and then to descend through the opposite leg. Their demolitions in India render them the greatest plague of the country.